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SURVEY OF RESIDENTS OF THE CALIFORNIA DESERT

Final Report

December 1978

By: Susan Higley Russell
Jean Lotridge

Prepared for:

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Denver, Colorado

Task Order YA-510-PH8-51
Contract YA 512-CT7-44

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INTRODUCTION

The Bureau of Land Management (BLM) is currently engaged in a comprehensive effort to plan for the future management and use of the California desert. The desert area of concern (hereinafter referred to simply as "the California desert" or "the desert") comprises about 25,000 square miles in the southeastern quarter of California and in 1976 had a population of about 470,000 persons.*

As part of BLM's planning efforts, several surveys have been conducted to gauge the public's attitudes toward and use of the desert area. One poll has been conducted with a national audience and two with statewide audiences.† A fourth survey, on which this report focuses, was conducted with residents of the California desert. Some of the questions asked in this survey were the same or similar to those asked in previous studies. In addition, other BLM-developed items were included that dealt with living in the desert and with perceptions of the economy and management of the desert.

The objectives of the study were to:

- Assess opinions of residents of the California desert regarding recreational use of the desert and land use planning and management in the desert.
- Identify regional differences, if any, among desert residents regarding their responses.
- Analyze the difference between regions and suggest explanations if justified by the data.
- Compare the Desert Region Survey with two previous statewide polls and a national public opinion survey, and suggest explanations for significant similarities and differences.

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*John Ryan et al, "Demographic and Economic Trends in the California Desert," SRI International report prepared for the Bureau of Land Management, May 1978.

†The national study was conducted in 1977 by the Gallup Organization, Inc. The two statewide surveys were conducted in 1975 and 1977 by Field Research Corporation.

- Suggest needs, if any, for further public opinion studies of the California desert planning effort, including specific issues that may surface during the survey or analysis of the survey data.

The survey was carried out by personal, in-home interviews with a stratified probability sample of 1,210 adult men and women, aged 18 and over, who are residents of the California desert. The sample was stratified into five regions specified by BLM (see Figure 1), and a minimum of 200 interviews were conducted in each region.

The interviewing was conducted between mid-September and mid-October, 1978, by Field Research Corporation for SRI International. The questions for this survey are shown in Appendix A. A description of the survey methodology, including sample design, interviewing procedures, and estimates of sampling error, is contained in Appendix B.

This report describes findings of the current survey, with a focus on regional differences, and compares these findings with those of the previous surveys noted above.

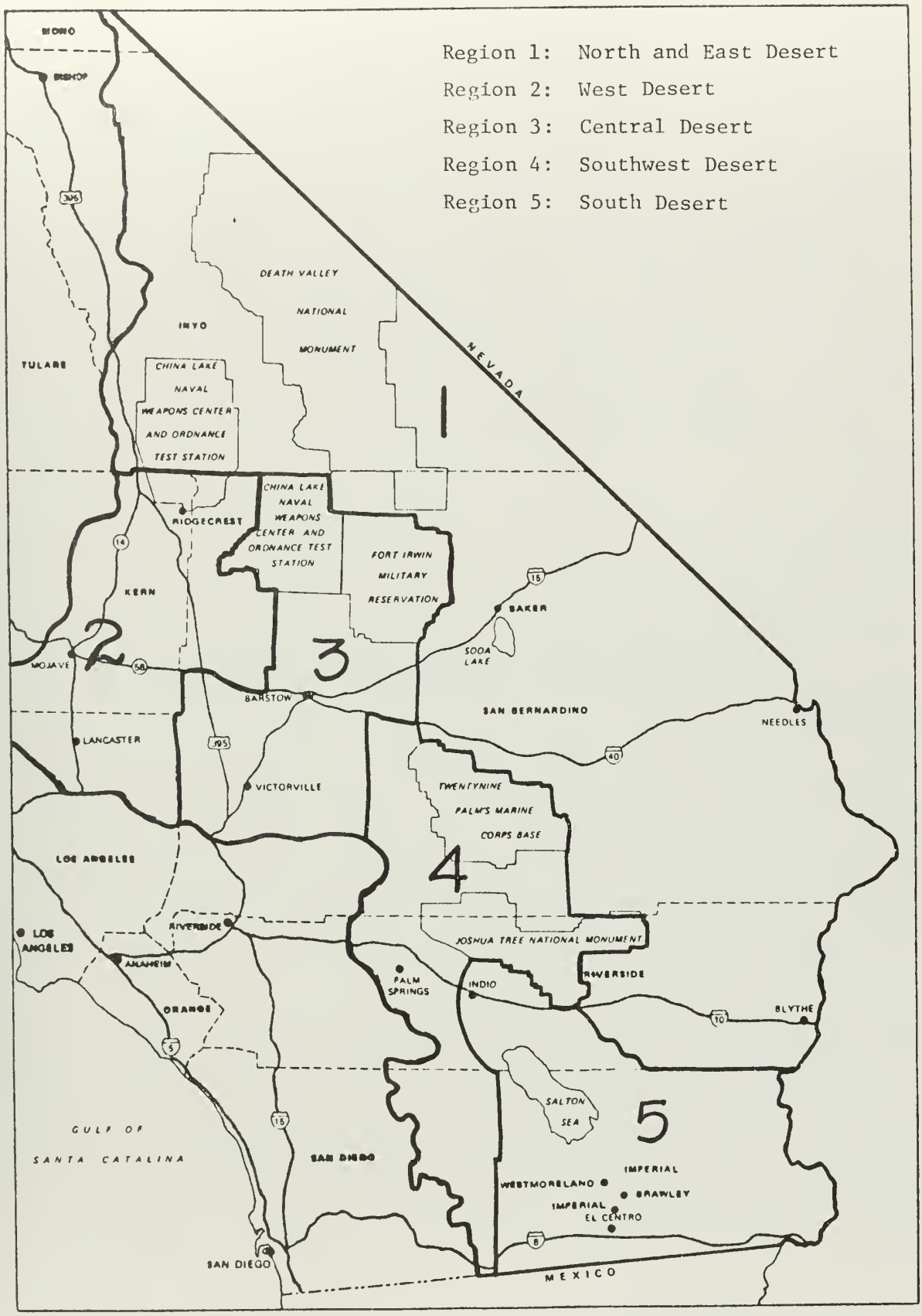

FIGURE 1. CALIFORNIA DESERT CONSERVATION AREA AND THE FIVE REGIONS IDENTIFIED FOR THE SURVEY

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II OVERVIEW OF SURVEY RESULTS

Desert Residency

Almost nine of every ten desert residents* were not born in the desert area but rather moved there, most often from other locations in southern California. Region 5 (the South desert) has the largest proportion of residents born in the desert (27%), and Region 4 (the Southwest desert) has the lowest (4%). The most frequent reason for coming to the desert is a job transfer or military assignment. This reason is especially common in Region 2 (the West desert). It is least common in Region 4, where medical reasons are relatively important precipitators of the move to the desert.

Activities in the Desert

84% of desert residents say they have engaged in one or more of 26 listed recreational activities in the California desert within the past year and about half say they have engaged in five or more of these activities. Not surprisingly, the percentage of desert recreationists is considerably higher than the 35% of statewide adult residents found to have engaged in desert activities in the 1977 California survey. Despite the differences in total percentages, the most popular desert activities are the same for both groups. These are: sightseeing or driving for pleasure on paved roads, picnicking, sightseeing and exploring, camping in developed campagrounds, and photography. Among desert residents, about half performed the first two of these activities, and roughly a third performed each of the others.

In general, the regions are fairly similar in their rankings of activities performed. However, relatively high proportions of residents of Region 1 (the North and East desert), have engaged in water-based activities on the Colorado River and in four-wheel driving. (Much of Region 1's population is located near the Colorado River.) Residents of Region 5 are noteworthy for their relatively low levels of participation in almost all of the activities listed.

*"Desert residents" are defined in this study as those aged 18 and over.

Males and persons under 30 tend to be overrepresented among participants of the more strenuous or traditionally male activities, such as motorcycle racing, hunting, and backpacking. Persons 60 and older are underrepresented in all activities except birdwatching, picnicking, and water-based activities on the Salton Sea.

About 40% of desert residents have visited national, state, or county parks in the desert in 1978, and 34% have visited BLM-administered lands during the year. One-fourth (25%) report having visited the Colorado River for recreational purposes, and a fifth (19%) of the residents have gone to the Salton Sea. Three-quarters (74%) of the residents of the region where the Colorado River is located (Region 1) reported recreational visits to the river, while only a third (32%) of residents in the Salton Sea region (Region 5) reported recreational visits to the Salton Sea. The relative attractiveness of these four areas is similar to that found in the 1977 statewide survey.

The main factors restricting use of the desert are time and money. Regulations on the use of public lands are cited as a restriction by 15% of desert residents and are cited relatively more often by residents of Region 1 than by others.

Attitudes about the Desert

One-third (33%) of the desert residents rate the desert as an excellent place to live; another 48% rate it as above average. Region 5 receives the lowest level of "excellent" ratings (18%); Region 3 receives the highest (47%).

The weather is both the single best-liked and worst-liked feature of the desert and overall seems to be more disliked than liked in all areas except Region 4.

Desert activities most widely disliked by desert residents involve motorcycles (both competitive and non-competitive riding), dunebuggies, four-wheel drive vehicles, and guns (for hunting and target shooting). Opposition to each of these is lowest in Region 1 and highest in either Region 4 or Region 2. These six activities are the same ones found most objectionable in the 1977 statewide survey of California residents, although those in the 1977 survey who had visited the desert were more apt to object to the activities than the current group of desert residents.

Off-road vehicular activities and electrical transmission lines are believed by about 50% of the desert residents to have a negative effect on the scenic quality of the desert. About 40% believe that power plants and visible marks of underground pipelines negatively affect the desert scenery. Again, Region 1 residents are least opposed, and desert residents in general are less opposed to these items than are statewide and national groups.

Desert residents are quite strongly supportive of protection of the natural state of the desert, of organized recreation places, and of campgrounds. They are moderately supportive of educational programs, primitive areas, control over public use of the desert, and energy development. Only low levels of support are given to road construction (either in general or specifically for four-wheel drive use), and to creation of places for off-road vehicles (ORVs). Mining and commercial development tend to be opposed.

In general, desert residents tend to be somewhat less oriented to conservation and somewhat more to use of the desert than are statewide and national groups. Since the desert is more accessible to its residents than to people who live far away, it is not surprising that the former group is more interested in the desert's "usability." This proximity rationale may also explain why, among desert residents, those in Region 1 tend to be less conservation-minded and more use-minded than those in regions where conservation tends to be a less immediate issue.

Land use issues most strongly related to demographic measures are organized recreation places, places for ORVs, and commercial development. Recreation places tend to be more favored by the young, by women, and by lower socioeconomic groups. ORV places are most apt to be supported by the young, and by middle socioeconomic groups. Commercial development obtains what little support it does from lower socioeconomic groups and from persons aged 50 and older.

The Economy and Management of the Desert

The desert's economy is believed to be most heavily dependent on recreation, travel, and farming activities. Activities believed to be least important to the desert economy are grazing livestock and mining

activities. Regions where particular activities predominate tend to rate those activities relatively high, compared both to other regions and other activities on the list. (For example, military activities are rated quite highly in Regions 2 and 3.) Demographic characteristics tend not to be strongly related to these ratings.

Among various kinds of recreational users of the desert, resort users and travelers going through the desert are perceived to be most important to the desert economy. Mechanized users of the desert and air sports enthusiasts are deemed least important. Predictably, Region 4 residents tend to rate resort users as more important than do residents of other regions. Similarly, residents of Region 1 rate water sports enthusiasts as more important than do residents of the other regions. Compared to older people, the young tend to see air sports enthusiasts and both mechanized and non-mechanized desert users as more important to the desert economy. On the other hand, older people rate resort users as more important than do younger people.

Slightly less than half (42%) of the desert residents have some idea of what BLM does; 13% claim to know BLM fairly well. BLM is best known in Region 1, and by older persons, persons in the upper socioeconomic groups, and men. The region with lowest overall familiarity with BLM is Region 5.

The most influential groups in decisions about management of BLM desert lands are believed to be business people and residents in the desert region. Third in perceived influence are conservation and environmental protection groups. Groups with the least perceived influence are livestock and grazing interests, mining interests, and California metropolitan area residents. The relatively low influence of livestock and mining interests parallels the low level of importance they are believed to have to the desert economy. It is interesting that although recreation activities are perceived to be the most important contributor to the desert economy, the perceived influence of organized recreational groups representing special users of the desert is only moderate.

Conclusion

The most notable findings of the current study are as follows:

- Desert residents tend to be more interested in development and active use of the desert than do statewide or nationwide residents, although even among desert residents there is widespread sentiment for conservation.
- Among the five desert regions, residents of Region 1 (the North and East desert) stand out as being the most supportive of such things as motorcycling and places for ORV use and the most opposed to controls over use of the desert.
- Residents of Region 4 (the Southwest desert) stand out as the most conservation-minded, the oldest, the least apt to be born in the desert, and the most apt to believe resort users are significant contributors to the desert economy.
- Region 5 (the South desert) residents are notable for a relatively high rate of residents born in the desert, for the importance they perceive farming to have, for their relatively low level of participation in recreational activities, and for their low level of familiarity with BLM.
- Regions 2 and 3 (the West and Central deserts) tend to fall in the intermediate levels on the issues outlined above.

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III THE SURVEY POPULATION

Population Demographics

The California Desert Survey was conducted by personal interviews with a total of 1,210 adults, 18 years of age and older. The distribution of completed interviews in the five regions and the weighted totals for each region appear in Table 1. All percentages presented in this report are based on weighted data (see Appendix B for a description of the weighting procedures).

Table 1

REGIONS WHERE INTERVIEWS TOOK PLACE

Region	Actual # Interviews	Weighted Regional Sizes*
1 North and East Desert	216	63
2 West Desert	244	330
3 Central Desert	249	193
4 Southwest Desert	242	264
5 South Desert	259	360
Total Completed	1,210	1,210

Table 2 shows the age distributions for the regional populations and for the total survey population. 28% of the total population is between 18 and 29 years old, and the percentage of each region falling within this age range varies from 23% in Region 1 (North and East desert) to 32% in Regions 2 (the West desert) and 3 (the Central desert). 38% of the total population are between the ages of 30 and 49. The regional extremes for this age group are a low of 29% in Region 4 (the Southwest desert) and a

*Weighted to account for: (a) variable number of interviews per cluster; (b) variable number of interview homes with telephone; and (c) differential populations of regions. Only weights (a) and (b) are applied to data for the separate regions. All three weights are applied to data for the total population.

high of 47% in Region 5 (the South desert). Finally, those aged 50 and over comprise 34% of the total population, ranging from 27% in Region 3 to 45% in Region 4.

Table 2

AGE

	Regions					
	1	2	3	4	5	Total
18-20	2%	4%	7%	5%	4%	5%
21-24	9	13	12	9	9	11
25-29	12	15	13	12	11	12
30-34	11	14	9	9	15	12
35-39	11	6	13	7	8	8
40-44	6	7	11	6	14	9
45-49	7	10	8	7	10	9
50-54	7	10	7	5	8	8
55-59	10	8	7	8	6	7
60-64	6	3	5	11	5	6
65-69	9	6	3	10	3	6
70 & Over	10	4	5	11	7	7
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)*

The distribution of males and females in the survey population is displayed in Table 3. Overall, 49% of the population are males. The percentage of males in each region ranges from 46% in Region 1 to 52% in Region 2.

---

*In this and all subsequent tables, regional n's do not sum to the total n because data entered into calculations involving the total sample are weighted to adjust for the different populations of the regions. (See Appendix B).

Table 3

SEX

	Regions					
	1	2	3	4	5	Total
Male	46%	52%	50%	49%	48%	49%
Female	54	48	50	51	52	51
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

Table 4 shows the distribution of household income levels. 73% of desert residents reported a household income of $10,000 or more. Within the five regions, the lowest percentage of $10,000+ income is 64% (in Region 1), and the highest is 78% (in Region 4). Region 4 also has a considerably higher proportion of residents with incomes of $50,000 or more (11%) than do any of the other regions (0.5% to 2%).

Table 4

HOUSEHOLD INCOME

	Regions					
	1	2	3	4	5	Total
Under $3,000	7%	3%	2%	3%	4%	3%
$3,000 to $4,999	7	7	8	5	5	6
$5,000 to $6,999	7	6	7	3	10	7
$7,000 to $9,999	15	8	11	11	13	11
$10,000 to $14,999	19	18	17	20	24	20
$15,000 to $19,999	14	15	29	11	15	16
$20,000 to $24,999	12	17	14	11	9	13
$25,000 to $29,999	11	9	7	10	7	8
$30,000 to $34,999	4	7	2	6	6	6
$35,000 to $39,999	1	5	1	4	2	3
$40,000 to $44,999	2	1	1	3	2	2
$45,000 to $49,999	*	2	*	2	1	1
$50,000 or more	1	2	*	11	2	4
Number of Cases	(210)	(235)	(245)	(228)	(238)	(1149)

*.5% or less

As with income, education levels in Region 4 tend to be higher than in other regions: 53% of Region 4 residents continued their education beyond high school, compared to 24% to 43% in other regions. (See Table 5.) Region 5, with a Spanish-surnamed population estimated to comprise about half of the county population, has the largest percentage of residents who have not gone beyond the eighth grade in school (25%).

Table 5

EDUCATION

	Regions					
	1	2	3	4	5	Total
Grade 8 or less	16%	6%	8%	6%	25%	12%
Grade 9, 10 or 11	18	6	21	9	17	13
Grade 12	42	45	36	32	25	35
1-2 Yrs Post H S	13	25	26	28	21	24
3 Yrs of College	2	3	3	8	1	4
Completed College	3	10	4	10	6	7
Advanced Degree	6	5	2	7	5	5
Number of Cases	(216)	(233)	(248)	(242)	(258)	(1193)

Desert Residency

A map showing the California desert was shown to respondents, and they were asked, "Were you born in the California desert area shown on this map, or did you move here?" Almost all (87%) reported having moved to the desert from some other area. Region 5 has the largest percentage of those born in that area (27%), and Region 4 has the smallest (4%). Of desert residents who have moved to the desert, 41% reported moving from another part of Southern California. Region 4 has the largest percentage from Southern California (54%), and Region 5 has the smallest percentage (18%). A larger percentage moved into Region 5 from the southern part of the United States (24%) and from Mexico (25%). Table 6 shows the percentages of residents born in the desert area and of those who moved there and Table 7 shows the previous residence of those who moved there.

Table 6

BORN OR MOVED TO DESERT

	Regions					
	1	2	3	4	5	Total
Born here	15%	7%	10%	4%	27%	13%
Moved here	85	93	90	96	73	87
Number of Cases	(216)	(244)	(247)	(240)	(258)	(1204)

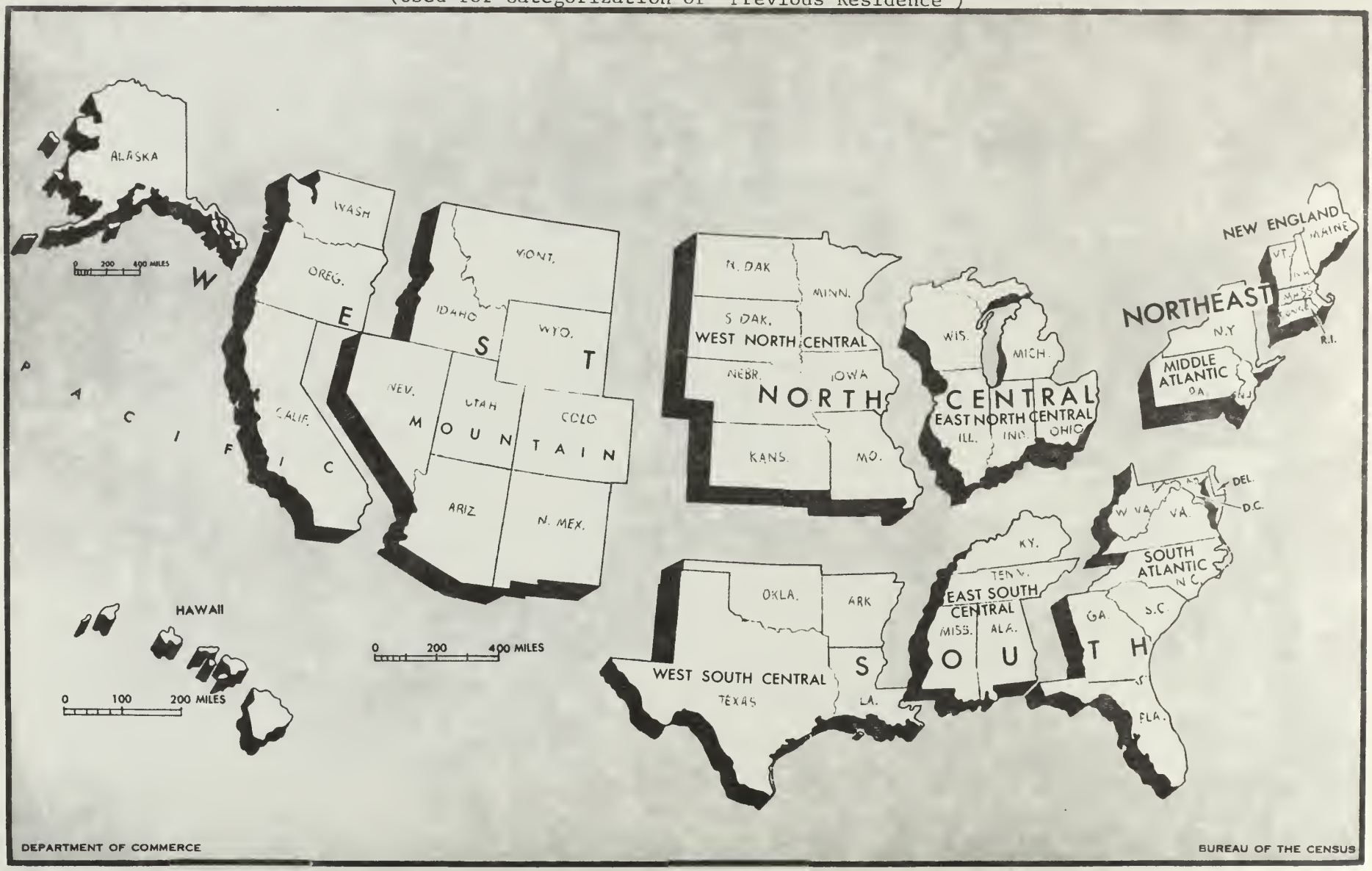
Table 7

PREVIOUS RESIDENCE

	Regions					
	1	2	3	4	5	Total
Southern Calif.	32%	51%	38%	54%	18%	41%
South*	14	8	14	7	24	13
North Central*	18	14	16	14	9	13
Mountain*	21	6	14	3	13	9
Northern Calif.	9	10	6	6	6	7
Mexico	2	1	0	2	25	7
Northeast*	0	5	4	7	2	4
Other Foreign	2	2	4	5	2	3
Other Pacific* States	2	3	4	2	1	3
Number of Cases	(184)	(221)	(218)	(229)	(190)	(1036)

*Figure 2 shows the states included in each of these categories.

Figure 2.—REGIONS AND GEOGRAPHIC DIVISIONS OF THE UNITED STATES
(Used for Categorization of "Previous Residence")



Those respondents who moved to the desert were asked, "Did you originally move to this area because of a job transfer or military service assignment?" Those who answered "No" were then asked, "Did you originally move to the desert for medical reasons or for the health of yourself or a family member?" And those who answered "No" to this question were asked, "What was your main reason for moving to the desert area?"

The results of this series of questions are shown in Table 8. The predominant reason for moving to the desert, given by 39% of the total, was a job transfer or military assignment. This was also the main reason given in each of the five regions, although the proportion ranged from 22% in Region 4 to 60% in Region 2, the site of Edwards Air Force Base. Medical reasons for moving to the desert were given by the second largest proportion of residents (13% of the total). Not surprisingly, the highest region in this category is Region 4 (21%), which also has the highest proportion of residents (7%) who reported moving there for retirement.

Table 8

PRIMARY REASON FOR MOVING TO THE DESERT

	Regions					
	1	2	3	4	5	Total
Job transfer/military	37%	60%	47%	22%	24%	39%
Medical reasons	9	11	11	21	9	13
Friends/Relatives	11	7	10	14	18	12
Parents moved here	16	6	10	5	20	10
Job opportunities	15	6	9	7	17	10
Like it here	5	6	4	10	6	6
Weather	1	1	4	10	1	4
Retirement	3	*	1	7	1	2
Other Misc.	3	3	4	4	4	4
Number of Cases	(175)	(222)	(218)	(228)	(178)	(1015)

*.5% or less

About a fifth of the people moving to the desert did so either because they had friends or relatives already living there (12%) or because they were living with their parents when the parents moved (10%). The region with the highest proportion of residents in these two categories is Region 5, where 38% moved to the desert because of friends, parents, or other relatives.

When asked, "Are you a permanent resident in the desert, or do you live here only part of the year," almost everyone reported being permanent residents (98%). Of the 2% who reported being part-time residents, 68% said they live in the desert at least four months out of the year. The remainder of the year, half (51%) of the part-time residents live in another part of Southern California.

Half (51%) of the population reported living in the desert area longer than 14 years. This proportion ranged from 37% in Region 4 to 71% in Region 5. Region 4's relatively low proportion may reflect the increasing popularity of the Southwest desert in recent years, as smog and congestion have become worsened in the greater Los Angeles area. In contrast, Region 5 has had the same families in its communities for many years, with only 10% of regional residents reporting having lived there less than 5 years.

When asked, "Do you have any present plans to move away from the desert region within the next year or so?" only 7% stated that they were planning to move away. Another 6% thought they might, while 87% have no plans to leave the area. Table 9 shows the breakdown of responses regarding these various aspects of desert residency.

Table 9

DESERT RESIDENCY

a. Permanent or Part-time

	1	2	3	4	5	Total
Permanent Resident	95%	99%	99%	95%	98%	98%
Part Time Resident	5	1	1	5	2	2
Number of Cases	(216)	(244)	(249)	(242)	(258)	(1209)

b. Number of Months, if Part Time

	1	2	3	4	5	Total
One month or less	12%	0	†	11%	22%	13%
Two months	12	0	†	7	0	5
Three months	23	0	†	21	0	14
Four months or more	53	100%	†	61	78	68
Number of Cases	(10)	(1)	(2)	(10)	(4)	(22)

c. Other Residence, if Part Time

	1	2	3	4	5	Total
Southern California	66%	0	0	84%	15%	51%
Northern California	7	0	0	16	19	14
Other	27	100%	100%	0	66	35
Number of Cases	(9)	(1)	(1)	(9)	(4)	(21)

d. Length of Desert Residency

	1	2	3	4	5	Total
Under one year	5%	9%	8%	11%	2%	7%
1 - 4 years	16	18	20	22	8	16
5 - 9 years	15	20	11	19	10	15
10 - 14 years	13	11	15	11	9	11
15 or more years	51	42	46	37	71	51
Number of Cases	(216)	(354)	(245)	(242)	(256)	(1201)

e. Plans to Move from Desert

	1	2	3	4	5	Total
Yes	9%	6%	7%	7%	8%	7%
Maybe, Not sure	3	6	3	7	6	6
No	88	88	90	86	86	87
Number of Cases	(216)	(244)	(248)	(238)	(255)	(1200)

†Missing data

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IV DESERT ACTIVITIES

Activities Performed Within the Past Year

"Sightseeing and driving for pleasure on paved roads" and "picnicking" are the two most frequently selected activities of desert residents, with each having been performed in the past year by half or more of the desert population. (See Table 10.) Among the five regions, paved road sightseeing is most popular in Region 3 (the Central desert), where it is named by 66% of the residents, and least popular (38%) in Region 5 (the South desert). Picnicking shows a narrower range across regions, with a minimum of 47% in Region 5 and a maximum of 54% in Regions 2 (the West desert) and 3 (the Central desert).

Overall, the regions are fairly similar in their rankings of activities performed, although there are some exceptions to this generalization. Residents of Region 1 (the North and East desert), site of the Colorado River, are substantially more likely to have engaged in water-based activities on the Colorado than are residents of other regions (66% vs. 14-22% for the other regions). Region 1 residents are also considerably more likely to have gone four-wheel driving than are other residents (37% vs. 16-23%).

Region 5 residents appear to engage in the fewest recreation activities of any of the regional groups: Region 5 has the highest percentage of residents who engage in none of the listed activities (24% vs. 8-17% for the other regions), and it has the lowest percentages of participants on 17 of the 26 activities listed.

The total number of activities performed during the past year ranges from 0 to 19 (Table 11). 14% of desert residents say they have performed none of the listed activities, 33% have performed 1-3 activities, 31% have performed 4-8 activities, and 22% have performed 9-19 activities. The mean number of activities performed is five.

Table 10

DESERT ACTIVITIES PERFORMED DURING PAST YEAR

	Regions					
	1	2	3	4	5	Total
Sightseeing & driving for pleasure on paved roads	53%	63%	66%	55%	38%	54%
Picnicking	50	54	54	49	47	51
Sightseeing & exploring	38	48	43	40	24	38
Hiking	28	35	39	36	22	32
Camping in developed campground	32	40	32	26	25	31
Photography	26	40	32	32	19	30
Camping at undeveloped sites	34	28	27	24	21	25
Educational activities	16	23	21	27	18	22
Target shooting	23	24	23	17	24	22
Four-wheel driving	37	21	23	16	16	20
Water based activities on Colo. R.	66	14	19	22	14	19
Motorcycle riding (non-competitive)	21	24	24	15	15	19
Rock climbing	18	19	17	23	16	19
Hunting	31	18	13	10	22	18
Horseback riding	12	16	15	20	11	15
Dunebuggying	21	13	15	9	12	13
Backpacking	8	17	6	18	9	12
Water based activities on Salton Sea	4	4	4	16	20	12
Rock & mineral collecting	25	14	15	8	8	12
Birdwatching	12	10	10	18	8	11
Painting	9	8	6	12	3	7
Prospecting as a hobby	11	7	4	4	2	4
Motorcycle riding (competitive	2	3	1	2	4	2
Scientific research	2	1	3	2	2	2
Sand sailing	*	2	2	*	3	2
Hang gliding	1	1	1	0	0	1
None of these	8	11	8	17	24	16
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

*.5% or less

Table 11

NUMBER OF DESERT ACTIVITIES PERFORMED DURING PAST YEAR

Number of activities performed	Percentage of total sample	
0	14%	
1	11	
2	12	33%
3	10	
4	8	
5-6	13	31%
7-8	10	
9-10	8	
11-13	9	22%
14-19	5	
>19	0	
	100%	

(n = 1210)

Mean = 5.02

Table 12 shows the list of desert activities performed crosstabulated against itself. Shown in the cells within the matrix is the percentage of persons engaging in each activity listed in the left-hand column who also engage in each activity listed across the top of the page. In interpreting the percentages, those within the matrix should be considered in relation to the percentages of the total sample who have engaged in the activities. (The latter percentages are given on the right-hand side of the table.) More specifically, one should determine if the percentage of "Xs" who do "Y" is higher or lower than the percentage of the total sample who do "Y". Consider, for instance, that 28% of target shooters have been backpacking. One might conclude from this percentage that we are not apt to find many backpackers among the ranks of target shooters.

However, only 12% of desert residents have been backpacking, so the average desert resident is only half as likely to be a backpacker as is a target shooter. Thus, if we wanted to find a backpacker, we would have better odds finding him among a group known to be target shooters than among a random group of desert residents.

Inspection of Table 12 indicates that most people who have engaged in any desert activities have also been sightseeing and driving for pleasure on paved roads, picnicking, and sightseeing and exploring. Almost all the percentages in the first three columns are substantially higher than the percentages of the total sample who have engaged in each of these three activities. Also of interest is that backpackers and hikers are more apt to have performed active motorized activities (four-wheel driving, non-competitive motorcycling, and dunebuggying) than is the average desert resident. Whereas only 13-20% of desert residents have engaged in these motorized activities, 29-49% of backpackers or hikers have done so. Conversely, the motorized groups are more apt to have hiked and backpacked than is the average desert resident. Also, similar percentages of the two sets of groups have campground camped or trail camped. These findings suggest that the stereotypes of the motorcyclists and the backpackers as being two quite distinct groups of persons are probably not valid, at least among desert residents.

Primary Desert Activity

Respondents who reported participating in any of the listed activities were asked, "Which of these, if any, is your primary recreational activity in the desert--the one that is most important to you in the desert." Results to this question are displayed in Table 13. Overall, paved road sightseeing is the most frequently named primary desert activity: it is named by 18% of the total population of recreationists and by 11-25% of the regional recreational populations. Within regions, paved road sightseeing is the top activity in Regions 2, 3, and 4. In Region 1, water-based activities on the Colorado River are named most often as the primary desert activity (named by 39%); and in Region 5, picnicking is the most frequently named primary desert activity (named by 15%).

Table 12

DESERT ACTIVITIES MATRIX

% of persons engaging in each activity in left column who also engaged in:

	Picnicking	Sightseeing & exploring	Hiking	Camping in dev'd. cmpgrnd.	Photography	Camping at undev'd. sites	Educational activities	Target shooting	Four-wheel driving	Colo. R. activities	Motorcycling (non-comp.)	Rock climbing	Hunting	Horseback riding	Dunebuggying	Backpacking	Salton Sea activities	Rock & mineral collecting	Bird watching	Painting	Prospecting as a hobby	Motorcycling (comp.)	Scientific research	Sand sailing	Hang gliding	% of total sample who have done this	(n)
Sightseeing & driving for pleasure on paved roads	66	53	41	43	43	34	31	28	24	22	24	26	23	19	16	16	15	17	17	10	7	3	3	1	1	54%	(650)
Picnicking	70		54	46	47	43	37	33	27	26	26	25	28	24	22	17	18	16	17	16	11	7	3	2	1	1	51	(613)
Sightseeing & exploring	75	72		55	47	50	43	36	34	32	27	29	33	28	24	19	25	16	24	20	11	10	3	4	1	1	38	(460)
Hiking	69	74	66		56	55	51	42	40	33	30	34	42	32	25	23	35	18	25	21	14	11	4	3	4	1	32	(383)
Camping in developed campground	74	77	57	57		49	54	35	35	30	33	35	33	32	25	23	26	18	18	17	14	9	5	3	1	*	31	(375)
Photography	78	73	64	58	51		44	43	35	29	29	27	35	25	25	18	23	16	25	22	14	10	3	4	2	1	30	(362)
Camping at undeveloped sites	73	74	65	64	66	52		38	47	44	40	37	36	39	31	30	36	19	25	19	13	12	6	4	2	2	25	(305)
Educational activities	77	76	63	60	49	59	44		32	24	24	26	36	26	26	16	23	18	23	26	15	10	1	6	1	2	22	(264)
Target shooting	67	62	57	56	48	47	52	31		43	32	41	35	53	27	30	28	21	20	14	12	8	5	3	4	1	22	(272)
Four-wheel driving	65	69	63	54	47	44	56	27	49		46	45	38	42	27	46	30	19	17	12	12	9	9	3	1	2	20	(236)
Water based activities - Colo. R.	62	69	53	49	54	45	53	27	38	47		36	33	39	24	30	29	27	19	13	10	11	7	3	1	1	19	(233)
Motorcycle riding (non-competitive)	68	67	57	56	57	42	48	29	48	46	36		38	36	33	40	33	16	16	12	15	8	8	3	1	1	19	(231)
Rock climbing	74	76	68	70	54	56	49	42	43	40	34	39		33	32	26	36	20	27	20	16	12	7	3	2	2	19	(225)
Hunting	69	68	61	57	56	43	56	32	68	46	42	39	35		30	28	28	30	18	15	11	9	7	2	4	1	18	(214)
Horseback riding	68	74	63	54	52	50	52	37	41	35	31	42	40	36		29	32	17	18	16	21	8	6	3	1	2	15	(180)
Dunebuggying	68	69	58	58	53	44	60	27	53	71	46	60	38	40	34		29	15	17	7	14	7	12	3	1	3	13	(153)
Backpacking	70	71	76	88	63	65	72	48	50	46	45	49	53	39	38	29		19	21	24	15	16	7	6	3	2	12	(152)
Water based activities - Salton Sea	69	71	53	50	48	41	42	34	41	32	45	26	33	46	22	16	21		19	27	10	9	6	2	3	0	12	(139)
Rock & mineral collecting	79	76	77	68	49	65	54	52	39	29	31	26	43	27	23	18	22	19		30	20	24	3	7	2	3	12	(141)
Birdwatching	80	71	66	58	46	60	42	50	27	22	23	20	33	24	21	7	27	27	31		21	15	*	4	2	1	11	(136)
Painting	73	77	60	60	60	57	46	46	39	32	25	5	40	27	43	24	26	15	33	32		16	5	7	2	0	7	(88)
Prospecting as a hobby	87	77	83	76	60	64	70	49	41	40	46	35	48	37	26	21	45	22	62	33	26		8	12	2	0	4	(54)
Motorcycle riding (competitive)	70	64	40	50	61	31	58	10	49	69	54	66	56	48	40	60	36	26	13	1	14	14		5	0	0	2	(30)
Scientific research	94	87	82	62	55	71	52	69	39	35	31	32	36	18	25	24	42	15	46	28	29	32	8		4	4	2	(21)
Sand sailing	34	39	33	76	21	30	26	17	55	14	10	17	27	50	11	6	26	56	19	12	10	5	0	4		0	2	(19)
Hang gliding	100	41	77	47	18	60	70	55	45	51	29	45	47	23	45	70	45	0	30	18	0	0	0	12	0		1	(7)

*.5% or less

Table 13

PRIMARY DESERT RECREATIONAL ACTIVITY

	Regions					
	1	2	3	4	5	Total
Sightseeing & driving for pleasure on paved roads	11%	18%	25%	25%	11%	18%
Camping in developed campground	6	13	5	6	9	9
Picnicking	3	5	8	7	15	8
Water based activities on Colo. R.	39	5	4	8	5	8
Sightseeing & exploring	2	9	9	6	6	7
Four-wheel driving	6	4	1	7	4	4
Hiking	1	2	7	6	4	4
Horseback riding	4	3	2	7	5	4
Camping at undeveloped sites	5	6	5	2	3	4
Educational activities	2	3	4	3	5	4
Hunting	5	3	3	3	6	4
Motorcycle riding (non-competitive)	2	5	7	*	4	4
Photography	*	6	3	6	2	4
Water based activities on Salton Sea	0	0	1	2	7	3
Target shooting	1	2	4	*	2	2
Rock & mineral collecting	3	0	2	2	3	2
Backpacking	0	1	1	*	3	1
Birdwatching	2	0	2	2	0	1
Dunebuggying	1	1	2	*	2	1
Motorcycle riding (competitive)	0	1	*	*	*	1
Painting	2	1	1	2	*	1
Prospecting as a hobby	2	*	0	0	0	*
Scientific research	0	0	*	0	*	*
Sand sailing	0	*	*	0	0	*
Rock climbing	*	0	0	0	0	0
Hang gliding	0	0	0	0	0	0
None of these	3	10	2	3	3	5
Number of Cases	(198)	(212)	(222)	(188)	(190)	(985)

*.5% or less

Potential Future Desert Activities

Respondents were asked, "Which of these activities in the California desert that you have not done in the past year do you think you might like to do in the future?" Table 14 presents the results to this question. Horseback riding, which only 15% of desert residents reported having done in the past year, is at the top of the "hopeful" list, with 14% of desert residents expressing an interest in trying that activity. Water-based activities on the Colorado River, performed by 19% of desert residents, also are hopeful activities for 14%. Third on the list is camping in developed campgrounds, cited as a hopeful by 13% of desert residents.

The activity making the biggest jump in priority from the "performed" list to the "hopeful" list is hang gliding, performed least frequently of all activities listed (by 1% of the desert residents), but eighth on the list of hopefuls (cited by 8% of the desert residents).

23% of desert residents indicated that there are no desert activities that they would like to do but have not yet done. Differences among regions for all the "hopeful" activities are relatively small, with an average of only 5 percentage points between the highest and lowest region on any given activity.

Desert Areas Visited

Respondents were asked how many days, if any, they spent during the past year at each of four areas in the California desert: the Salton Sea; the Colorado River; national, state, or county parks; and desert areas administered by the Bureau of Land Management. They were shown a map indicating the location of these areas and were asked to include in their answer only the number of days spent visiting for recreational purposes; they were asked not to include business trips, visits to friends or relatives, or traveling through the area to get somewhere else.

As shown in Table 15, the areas visited by the largest percentage of desert residents (38%) were the national, state, and county parks. Second most popular are BLM-administered lands (34%), followed by the Colorado River (25%), and then by the Salton Sea (19%).

Table 14

DESERT ACTIVITIES WOULD LIKE TO TRY

	Regions					
	1	2	3	4	5	Total
Horseback riding	12%	15%	20%	9%	15%	14%
Water based activities on Colo. R.	5	16	18	17	9	14
Camping in developed campground	9	11	11	9	18	13
Camping at undeveloped sites	13	12	12	6	9	10
Photography	7	12	10	7	10	10
Dunebuggying	9	11	11	6	10	10
Backpacking	4	12	12	8	6	9
Hang gliding	6	10	11	11	4	8
Hiking	7	8	10	8	7	8
Picnicking	5	6	8	7	11	8
Sightseeing & exploring	11	7	8	6	10	8
Water based activities on Salton Sea	2	10	9	7	9	8
Motorcycle riding (non-competitive)	5	8	6	6	7	7
Prospecting as a hobby	7	9	7	7	4	7
Rock & mineral collecting	7	6	9	5	7	7
Four-wheel driving	9	7	6	4	7	7
Educational activities	6	7	6	5	6	6
Sand sailing	4	7	7	9	4	6
Painting	4	6	6	7	3	6
Sightseeing & driving for pleasure on paved roads	2	3	4	3	11	6
Hunting	7	6	8	1	6	5
Scientific research	3	5	3	5	3	4
Rock climbing	3	2	5	4	4	4
Target shooting	5	4	4	2	5	4
Birdwatching	2	4	3	3	3	3
Motorcycle riding (competitive)	0	2	1	1	1	1
None of these	26	17	22	37	19	23
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

Table 15

DESERT AREAS VISITED

a. Percentage Spending One or More Days at Selected Desert Areas During the Past Year

	Regions					
	1	2	3	4	5	Total
Salton Sea	7%	8%	5%	24%	32%	19%
Colorado River	74	17	21	27	23	25
National, State, or County Parks	26	44	37	41	29	38
Desert Areas administered by Bureau of Land Management	44	32	41	29	32	34
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

b. Mean Number of Days Spent at Each Area During the Past Year

	Regions					
	1	2	3	4	5	Total
Salton Sea	5.4	9.6	6.2	6.7	12.8	10.2
Colorado River	65.1	12.0	12.4	15.8	6.1	17.2
National, State, or County Parks	14.7	9.6	8.6	12.7	6.5	9.9
Desert Areas administered by Bureau of Land Management	43.0	13.3	16.5	15.4	12.7	15.5

The regional results vary considerably both in the rank order of the areas and in the absolute proportion of the population who have visited the area. In Region 1, site of the Colorado River, the highest proportion of residents (74%) visited the Colorado River. In Regions 2 and 4, national, state, and county parks are the most popular areas (visited by 44% of Region 2 residents and by 41% of Region 4 residents). BLM-administered lands are the most popular areas in Region 3 (visited by 41% of Region 3 residents). And in Region 5, highest popularity is tied by the Salton Sea (which is located in Region 5) and BLM-administered lands, both of which have been visited by 32% of Region 5 residents. For all regions except Region 5, the Salton Sea is the least frequently visited of the four areas listed.

The mean number of days spent during the past year in each area ranges from 9.9 days in the various parks, to 17.2 days at the Colorado River. Within each region, the average number of days spent at each area is typically between about one and two weeks. However, Region 1 residents who have visited the Colorado River reportedly spend an average of 65.1 days there, and those who have visited BLM lands reportedly average 43.0 days there. It is possible that these data reflect some confusion about how to respond among respondents who live in or near the areas in question.

Factors Restricting Use of the Desert

Respondents were given a list of items with the instructions that the list contained "some things that might restrict a person's use of the California desert." They were then asked, "Which of these, if any, do you feel are the most important things that keep you from using the California desert more than you do?"

As shown in Table 16, the two most frequently mentioned reasons were time ("more important personal interests and obligations") and money ("cost of time, travel, equipment, etc."). These two restrictions were selected by 37% and 33% of desert residents, respectively. "Distance to travel" is believed to pose a restriction to 21%. And regulations on the use of public lands restricts desert use for 15% of the people. 4% of the people volunteered that poor health and/or old age kept them from using the desert as much as they would like.

Regional proportions are generally quite similar to one another. However, there is a range of 16 percentage points between Region 1 (25%) and Region 5 (41%) on the issue of time (other interest and obligations) as a restriction. There is also a difference of 16 points between Regions 1 and 4 on the issue of public lands regulations: 8% of Region 4 residents cite this as a restriction, vs. 24% of Region 1 residents.

Table 16

RESTRICTIONS IN USE OF THE DESERT

	1	2	3	4	5	Total
More important personal interests and obligations	25%	34%	40%	38%	41%	37%
Cost of time, travel, equipment, etc.	33	31	31	31	33	33
Distance to travel	20	26	19	19	19	21
Regulations of the use of public lands	24	21	14	8	14	15
Low personal interest in the California desert	8	12	6	5	14	10
Conflicts with other recreationists	9	11	11	8	10	10
Opportunities to do the same things elsewhere	2	5	7	7	12	8
Health, Age (specified)	3	4	5	7	3	4
Miscellaneous Other, specified	0	0	2	4	3	2
Don't know	8	5	7	6	4	6
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

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V ATTITUDES ABOUT THE DESERT

Best and Worst Features of Desert Living

When respondents were asked, "What is the one thing you like best about living in the desert region?" the weather was the feature mentioned most often (Table 17). The range was from a high of 58% mentioning the weather in Region 4 (the Southwest desert) to a low of 37% in Region 2 (the West desert). The serenity of the area was mentioned by more residents of Region 2 than of the other regions, and the smog-free, clean air was a feature especially important to the residents of Region 3 (the Central desert).

Strangely enough, when respondents were asked, "What is the one thing you dislike the most about living in the desert region?" weather was again mentioned most often (Table 18). By taking the difference between those who thought the weather was the desert's best attribute and subtracting the negative responses, the net score is as follows:

Region 1:	-13
Region 2:	+21
Region 3:	+21
Region 4:	+16
Region 5:	-18
Total:	+8

Some residents were more specific about their dislike of a particular aspect of the weather, namely wind and the sand blowing. If these are considered additional negative weather comments in the two regions where they were most mentioned, Regions 2 and 3, the net score for those regions would be:

Region 2:	-20
Region 3:	-18

This leaves only Region 4 with a positive net score as far as the weather is concerned.

Table 17

BEST ASPECTS OF DESERT LIVING

	Regions					
	1	2	3	4	5	Total
Weather	38%	37%	44%	58%	42%	44%
Quiet/secluded	19	25	16	12	15	17
No smog/clean air	7	17	26	7	4	12
Job opportunities	4	2	1	4	9	5
Spacious	3	5	4	3	4	4
Everything/like it here	2	1	1	2	2	2
Desert beauty	1	1	2	4	1	2
Friendly people	2	1	*	3	1	2
Recreation	5	1	0	0	1	1
Colorado River Area	8	0	0	0	*	*
Other misc.	6	7	4	4	11	5
Nothing	5	4	2	2	5	4
Number of Cases	(213)	(244)	(249)	(241)	(251)	(1197)

*.5% or less

Table 18

WORST ASPECTS OF DESERT LIVING

	Regions					
	1	2	3	4	5	Total
Weather	51%	16%	23%	42%	60%	36%
Wind/Sand	7	41	39	9	7	22
Lack of events	5	6	4	7	3	5
Inconvenient shopping	4	8	6	4	1	4
Cost of living	4	1	*	5	2	2
Scenery	1	4	3	1	*	2
Snakes and insects	1	*	2	1	2	1
Too many people	0	*	2	3	*	1
Tourists	0	0	1	1	1	1
Smog	0	*	1	3	0	1
Growing too fast	*	1	1	2	0	1
Health suffers	1	1	1	*	*	1
Desert management	1	*	0	2	1	1
Too few people/lonely	1	1	0	1	2	1
Travel distance	5	2	1	*	2	1
Lack of job opportunities	1	1	*	0	*	*
Other misc.	3	6	5	6	5	6
Nothing	14	11	21	13	12	14
Number of Cases	(214)	(243)	(248)	(242)	(258)	(1206)

*.5% or less

Only 4% of the respondents said there was nothing they liked best about the desert, while 14% could think of nothing they disliked about it.

Ratings of the Desert as a Place to Live

When asked, "How would you personally rate the desert as a place to live?" a large majority (81%) rated the area as above average or excellent. More residents in Region 3 rated the area "excellent" than did residents in the other four regions. Region 5 (the South desert) residents were least enthusiastic, with only 18% rating the area as excellent. The mean scores indicate that only in Region 5 was the average slightly below the "good" rating. Table 19 presents the distribution of responses.

Descriptors of the Desert

Respondents were shown a card listing "a number of words or phrases which some people might use to describe their experience in the California desert." They were asked, "Which two or three best describe what is most important to you about the desert?" After the respondent answered, the interviewer probed with, "Are there any other words or phrases that aren't listed that you feel are especially descriptive of how you feel about the desert?" Table 20 lists the responses in rank order. The words "beauty" and "freedom" were selected from the list by half or more of the residents in each of the five regions as best describing what is most important to them about the desert. In addition, "nature" was mentioned by about 50% of the residents of Region 4, and "solitude" was mentioned by half the residents of Regions 2 and 3.

Objectionable Desert Activities

Respondents were shown a card and asked, "Which of these activities, if any, do you find particularly objectionable, that is, things which detract from your own recreation or enjoyment of the California desert?" As indicated in Table 21, non-competitive and competitive motorcycle riding were the two activities mentioned most often in all regions. Non-competitive cycling generally has the most objectors, ranging from 20% in Region 1 (the North and East desert) to 40% in Region 2 (the West desert). Dunebuggying was

Table 19

RATING OF AREA AS PLACE TO LIVE

	Regions					
	1	2	3	4	5	Total
Excellent	35%	36%	47%	40%	18%	33%
Good--Above Avrg.	40	49	44	44	54	48
Fair--Average	20	13	8	14	27	17
Poor--Below Avrg.	3	2	*	2	2	2
Terrible	2	0	1	*	*	*
Mean	1.96	1.81	1.63	1.79	2.13	1.88
Number of Cases	(216)	(241)	(248)	(240)	(258)	(1202)

Table 20

DESCRIPTORS OF THE DESERT

	Regions					
	1	2	3	4	5	Total
Beauty	52%	59%	63%	65%	51%	58%
Freedom	59	56	59	50	52	54
Nature	38	47	44	53	43	46
Solitude	39	51	50	43	34	43
Family Togetherness	43	33	39	24	35	33
Adventure	26	25	22	19	27	24
Alter Routine of Life	9	7	11	14	14	11
Companionship	8	8	13	10	8	9
Accomplishment	3	4	4	8	9	6
Recognition	3	2	1	3	2	2
Other--specify	12	11	13	19	13	14
Don't know	0	3	3	2	1	2
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

*.5% or less

Table 21

OBJECTIONABLE DESERT ACTIVITIES

	Regions					
	1	2	3	4	5	Total
Motorcycle riding (non-competitive)	20%	40%	39%	37%	26%	34%
Motorcycle riding (competitive)	10	29	30	38	24	29
Dunebuggying	10	23	22	32	19	23
Hunting	6	10	13	23	12	14
Target shooting	6	12	16	20	10	14
Four-wheel driving	4	17	11	16	10	13
Camping at undeveloped sites	2	1	2	5	2	2
Hang gliding	2	0	3	2	2	2
Birdwatching	1	0	1	0	2	1
Hiking	0	0	0	0	2	1
Scientific research	3	2	1	1	2	1
Rock climbing	0	0	*	0	3	1
Sand sailing	1	1	*	1	1	1
Horseback riding	0	0	0	1	1	*
Painting	2	0	0	*	1	*
Sightseeing & driving for pleasure on paved roads	0	1	1	0	*	*
Backpacking	2	0	0	*	1	*
Camping in developed campground	1	*	*	*	*	*
Educational activities	2	0	*	0	1	*
Water based activities on Colo. R.	2	0	1	*	0	*
Photography	1	0	0	0	1	*
Prospecting as a hobby	*	0	*	*	0	*
Rock & mineral collecting	*	1	*	*	*	*
Sightseeing & exploring	0	0	0	*	*	*
Water based activities on Salton Sea	0	1	*	0	*	*
Picnicking	0	0	*	0	0	0
None of these	57	38	29	38	40	38
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

*.5% or less

the next most frequently mentioned activity, with 23% of desert residents finding it objectionable. Among the regions, the least opposition comes again from Region 1, where only 10% oppose the activity. The greatest opposition (32%) is from Region 4. Only three other activities were selected as objectionable by 10% or more of desert residents. These are hunting (14%), target shooting (14%), and four-wheel driving (13%). Thus, the six most objectionable activities all involve either motorized (and generally off-road) vehicles or guns. Opposition to all of these is lowest in Region 1 and highest in either Region 2 or Region 4. 38% of desert residents reported that they found none of the listed activities to be objectionable. Within the regions, the percentages who found none of the activities to be objectionable ranges from 29% in Region 3 to 58% in Region 1.

Factors Affecting the Scenic Quality of the Desert

Respondents were handed a card and told, "This card lists a number of things which might have an effect on the scenic quality of the desert. For each item listed, please tell me if it has any effect on your enjoyment of desert scenery. Select an answer category that best fits how you feel about each one." Answer categories provided were: (1) Strong negative, (2) Slight negative, (3) No effect, and (4) Positive effect. The mean responses obtained on this four-point scale range from a high of 2.99 for "grazing activities" to a low of 2.35 for "off-road vehicular activities." (See Table 22.) Thus, on the average, all items listed, are seen by desert residents to have between a "slight negative" and "no effect" on the scenic quality of the desert.

Grazing activities also receive the most favorable mean ratings in each of the five regions. ORVs receive the least favorable mean ratings of all items listed by residents of Regions 2 and 3. In Region 1, the least favorable mean rating goes to power generating plants; in Region 4, electrical transmission lines are held in lowest regard; and in Region 5, the bottom rating goes to "visible marks of ditches that have been dug for underground pipelines."

Differences among the regions in mean ratings are generally small, although one-way analyses of variance show that the means are significantly different from one another ($p<.001$) on ratings of visible marks of ditches, electrical transmission lines, and ORV activities. It is also notable that Region 1 means are the most positive of the regional means for all

Table 22

FACTORS AFFECTING DESERT SCENERY

(Means)

4-point Scale
"Strong negative" = 1; "Positive effect" = 4

	Regions					
	1	2	3	4	5	Total
Grazing activities	2.96	2.92	3.07	3.08	2.93	2.99
Mountain-top communication sites	2.89	2.81	2.85	2.86	2.90	2.86
Mining activities	2.83	2.67	2.68	2.80	2.66	2.71
Power generating plants	2.61	2.42	2.46	2.52	2.55	2.50
Visible marks of ditches that have been dug for underground pipelines	2.66	2.41	2.42	2.54	2.29	2.42
Electrical transmission lines	2.69	2.30	2.35	2.20	2.52	2.37
Off-road vehicular activities	2.65	2.30	2.20	2.32	2.44	2.35

factors except grazing and mountain-top communication sites. This finding is consistent with the previously noted finding that Region 1 residents are the least apt to find various desert activities objectionable.

Table 23 shows the distributions of regional and total responses across the four answer categories described above. Inspection of this table shows that for each of the scenic factors, the largest response category is "no effect": Between 42% (for ORV activities) and 74% (for mountain-top communication sites) of desert residents feel that each of the activities listed has no effect on the scenic quality of the desert.

The factor with the highest proportion of "positive effect" ratings (19%) is the one with the highest mean rating: grazing activities. And the factor with the highest proportion of "strong negative" ratings (27%) is the one with the lowest mean ratings: ORV activities. Regional differences seen in these tables are also reflected in the mean ratings, discussed above.

Sources of Concern for Personal Safety in the Desert

Respondents were shown a card and asked, "Do you have a concern for your personal safety while in the desert regarding any of the things listed on this card?" About half selected "snakes, insects, etc." (48%) and "car breakdown" (47%). (See Table 24.) A sizable minority (39%) also selected "getting lost" (23%) and "fear of other recreationists" (19%). 15% said that none of the items on the list is a source of concern to them.

Inspection of the regional proportions shows that the largest inter-regional differences are on the item "unexploded military shells and bombs," where there is a 31-point spread across regions, from 23% in Region 4 to 54% in Region 5. Since Region 5 is the site of a gunnery range, the relatively high degree of concern about shells and bombs is not surprising. Concern about shells and bombs is also relatively high (42%) in Region 3 (the Central desert), where a naval weapons center is located.

A considerable range of proportions (28 points) is also found on the item "getting lost." The lowest level of concern (13%) is in Regions 2 and 4; the highest (41%) is in Region 5. The third largest point spread is 26 points on "unfenced, abandoned mine shafts." This issue raises the least concern (24%) in Region 4 and the most (50%) in Region 3.

Table 23

FACTORS AFFECTING DESERT SCENERY

a. Grazing Activities

	Regions					
	1	2	3	4	5	Total
Strong negative	3%	9%	6%	3%	4%	5%
Slight negative	9	8	6	5	16	9
No effect	76	66	64	73	62	67
Positive effect	12	17	24	19	18	19
Number of Cases	(216)	(241)	(249)	(241)	(256)	(1200)

b. Mountain-top Communication Sites

	Regions					
	1	2	3	4	5	Total
Strong negative	4%	3%	3%	4%	4%	3%
Slight negative	6	17	18	13	15	15
No effect	87	75	71	78	69	74
Positive effect	3	5	8	5	12	8
Number of Cases	(216)	(238)	(248)	(242)	(256)	(1196)

c. Mining Activities

	Regions					
	1	2	3	4	5	Total
Strong negative	7%	12%	9%	8%	12%	10%
Slight negative	12	15	21	11	21	17
No effect	72	68	64	75	57	66
Positive effect	9	5	6	6	10	7
Number of Cases	(216)	(239)	(249)	(241)	(256)	(1198)

d. Power Generating Plants

	Regions					
	1	2	3	4	5	Total
Strong negative	16%	17%	18%	17%	14%	16%
Slight negative	14	27	23	20	27	24
No effect	63	54	55	59	49	54
Positive effect	7	2	4	4	10	6
Number of Cases	(216)	(242)	(249)	(239)	(257)	(1201)

e. Visible Marks of Ditches That have been Dug for Underground Pipelines

	Regions					
	1	2	3	4	5	Total
Strong negative	9%	20%	16%	19%	25%	20%
Slight negative	20	23	30	16	25	23
No effect	67	53	50	56	45	51
Positive effect	4	4	4	9	5	6
Number of Cases	(216)	(239)	(249)	(239)	(257)	(1197)

f. Electrical Transmission Lines

	Regions					
	1	2	3	4	5	Total
Strong negative	10%	20%	18%	32%	14%	20%
Slight negative	18	31	32	22	27	27
No effect	66	48	47	40	52	48
Positive effect	6	1	3	6	7	5
Number of Cases	(216)	(242)	(249)	(241)	(253)	(1198)

g. Off-road Vehicular Activities

	Regions					
	1	2	3	4	5	Total
Strong negative	14%	30%	30%	31%	22%	27%
Slight negative	14	19	29	15	24	21
No effect	65	42	31	45	41	42
Positive effect	7	9	10	9	13	10
Number of Cases	(216)	(241)	(249)	(241)	(255)	(1200)

Table 24

CONCERN FOR PERSONAL SAFETY

	Regions					
	1	2	3	4	5	Total
Snakes, insects, etc.	51%	48%	51%	37%	53%	48%
Car breakdown	46	41	46	42	55	47
Flash floods	42	35	34	46	38	39
Unfenced, abandoned mine shafts	37	41	50	24	42	39
Unexploded military shells & bombs	31	34	42	23	54	39
Getting lost	20	13	23	13	41	23
Fear of other recreationists	16	17	19	15	23	19
None of these	15	19	11	18	12	15
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

Attitudes about Selected Types of Desert Land Use

Respondents were told, "This card lists a number of things that are now, or might be, in the California desert. Please study the items and tell me which ones you would like to see more of in the desert." Protection of desert scenery, wildlife and ecology, and areas of historic and archeological importance were the items chosen most often: each was selected by 55-60% of desert residents (Table 25). About half (53%) the residents also would like to see more places for organized recreation (amusement parks, sports facilities, etc.) and more campgrounds. The lowest levels of support were given to roads (24%), commercial development such as hotels and restaurants (22%), and mining (22%). Only 2% of desert residents stated "none of these" in response to the listed types of land use.

Among the regions, Region 1 gives the least support to protection of the desert (36-40%) and Region 4 gives the most support (75-80%). Regions 1 and 4 are also lowest and highest, respectively, in their support for more control over recreational and other public use of the desert (23% and 62%), roads (16% and 33%), commercial development (15% and 28%), and educational or interpretive programs (24% and 54%). In addition, Region 4 also gives the most support of the five regions to places for organized recreation (62%), campgrounds (53%), and energy development (59%). In brief, it seems that, relative to residents of other regions, Region 4 residents want to see more of almost everything!

After selecting what they wanted to see more of, respondents were asked, "And which ones would you like to see less of in the California desert?" Table 26 shows that the most frequent responses to this question were places for ORVs (28%) and commercial development (26%). Least opposition was voiced to protection of the desert (2-3%) and to educational or interpretive programs (1%). About a fourth (23%) of desert residents do not want to see any of the listed types of land use curtailed.

The region least apt to oppose places for ORVs and commercial development is Region 1 (8% and 17% opposed to the respective items), and the region most apt to oppose these things is Region 4 (40% and 36% opposed to the respective items). Regions 1 and 4 are also at the two extremes in

Table 25

SUPPORT FOR SELECTED TYPES OF DESERT LAND USE

	Like to see more of					
	Regions					
	1	2	3	4	5	Total
Protection of desert scenery & natural character	40%	61%	63%	80%	45%	60%
Protection of desert wildlife & ecology	39	58	60	80	48	59
Protection of areas of historic and archeological importance	36	50	55	75	49	55
Places for organized recreation (amusement parks, sports facilities, etc.)	45	47	56	62	51	53
Campgrounds	49	47	52	53	48	49
Energy development such as gas and oil wells, geothermal, solar, etc.	34	31	42	59	45	43
Control over recreational & other public use	23	33	42	62	40	42
Educational or interpretive programs	24	29	40	54	39	39
Places for use of off-road vehicles like dunebuggies and motorcycles	37	36	36	31	25	33
Roads	16	20	23	33	24	24
Commercial development such as hotels and restaurants	15	21	16	28	22	22
Mining	13	7	18	14	10	12
None of these	4	2	*	1	2	2
Don't know/can't say	*	1	1	1	2	1
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

*.5% or less

Table 26

OPPOSITION TO SELECTED TYPES OF DESERT LAND USE

	Like to see less of					
	Regions					
	1	2	3	4	5	Total
Places for use of off-road vehicles like dunebuggies and motorcycles	8%	26%	28%	40%	26%	28%
Commercial development such as hotels and restaurants	17	24	32	36	18	26
Mining	2	8	11	23	14	14
Energy development such as gas and oil wells, geothermal, solar, etc.	10	13	14	9	11	12
Roads	8	8	10	12	11	10
Control over recreational and other public use	22	9	9	6	10	9
Places for organized recreation (amusement parks, sports facilities, etc.)	5	8	8	12	6	8
Campgrounds	2	4	3	4	7	5
Protection of desert wildlife and ecology	4	1	2	1	5	3
Protection of areas of historic and archeological importance	1	0	2	1	3	2
Protection of desert scenery & natural character	4	0	2	1	2	2
Educational or interpretive programs	*	1	*	1	1	1
None of these	39	25	23	13	25	23
Don't know/can't say	4	5	5	7	7	6
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

*.5% or less

the regional distributions on curtailment of none of the listed items: 39% of Region 1 residents do not want to see any of the items curtailed, compared to 13% of Region 4 residents.

Table 27 shows the net support score for each of the types of land use discussed above. This score was calculated simply by subtracting the percentage who want to see less of something from the percentage who want to see more of it. The table shows that the three items relating to protection of the desert remain the most widely supported, and the three items with the largest opposition (places for ORVs, commercial development, and mining) have the three lowest net support scores.

Note, however, that while places for ORVs received the strongest opposition (28%), they were supported by a slightly larger group (32%), and thus ended up with an overall (small) positive net score (4%). Similar disagreement is evident on the issue of commercial development, although this ended up slightly on the negative side (-4%). In contrast, the issue of mining seems to produce less interest on either side, with only 12% wanting to see more of it and 14% wanting to see less of it.

Across the regions, Regions 1 and 4 retain their position of almost always being at the opposite ends of the regional distributions. The issue that produces the greatest regional difference is control over recreation and other public use. This issue receives a scant +1% from Region 1 and a +56% from Region 4. Other issues that produce substantial regional differences are:

- Protection of desert wildlife and ecology (35% in Region 1 to 79% in Region 4)
- Protection of desert scenery and natural character (36% in Region 1 to 79% in Region 4)
- Protection of areas of historic and archeological importance (35% in Region 1 to 74% in Region 4)
- Places for use of off-road vehicles like dunebuggies and motorcycles (-9% in Region 4 to 29% in Region 1)
- Energy development such as gas and oil well, geothermal, solar, etc. (18% in Region 2 to 50% in Region 4)
- Education or interpretive programs (24% in Region 1 to 53% in Region 4)

Table 27

NET SUPPORT* FOR SELECTED TYPES OF DESERT LAND USE

	Regions					
	1	2	3	4	5	Total
Protection of desert scenery & natural character	36%	61%	61%	79%	43%	58%
Protection of desert wildlife and ecology	35	57	58	79	43	56
Protection of areas of historic and archeological importance	35	50	53	74	46	53
Places for organized recreation (amusement parks, sports facilities, etc.)	40	39	48	50	45	45
Campgrounds	47	43	49	49	41	44
Educational or interpretive programs	24	28	40	53	38	38
Control over recreational & other public use	1	24	33	56	30	33
Energy development such as gas and oil wells, geothermal, solar, etc.	24	18	28	50	34	31
Roads	8	12	13	21	13	14
Places for use of off-road vehicles like dunebuggies and motorcycles	29	10	8	-9	-1	4
Mining	11	-1	7	-9	-4	-2
Commercial development such as hotels and restaurants	-2	-3	-16	-8	4	-4
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

*Percentages who would like to see more of a given land use minus the percentage who would like to see less of it.

Further Attitudes about Selected Types of Desert Land Use

Tables 25 through 27 presented the results of questions in which respondents were asked to select any of the items presented. Following these questions, respondents were given a series of "forced choice" questions in which they were asked to determine, for each item, whether they wanted to see more, about the same, less or the elimination of a particular type of land use. The results to these questions are shown in Table 28.

The same general sentiments are evident in these responses as were evident in the responses discussed in the previous section: protection of the desert is supported most widely, and ORV areas and four-wheel drive roads are generally opposed or given only scant support.

Interestingly, the forced choice format led to an increase of about 10 points in the support for protection of desert wildlife and ecology, from 59% to 69%. The percentage who want to see more campgrounds also increased, from 49% to 67%. The forced choice wording on this issue was "developed campgrounds" rather than simply "campgrounds" (as on the previous question), this change in wording may have helped to increase support. The percentage of residents who want to see more control over recreational and other public use likewise increased (from 42% to 55%). However, on this issue, the percentage who want less control also increased very slightly from 9% to 12%.

On the issue of areas for ORV activities, the percentages of residents wanting more (33%) and those wanting less (28%) remained essentially unchanged from the previous question, in spite of a change of wording from "places for use of ..." to "open areas for use of ..." However, an additional 14% reported they would like to see ORV areas eliminated. Regional differences on these issues are similar to those reported above.

Two types of land use not included in the previous question were asked under the forced choice format. These were "primitive areas," which received a net support of 41%, and "four-wheel drive roads," which received a net support of 12%. Once again, Regions 1 and 4 are at either extreme on these two issues: Region 1 has the lowest net support score for primitive areas (19%), and Region 4 is highest (54%). Conversely, Region 4 has the lowest net support for four-wheel drive roads (-7%), while Region 1 (tied with Region 5) is highest (28%).

Table 28

FURTHER ATTITUDES ABOUT SELECTED TYPES OF DESERT LAND USE

a. Protection of Desert Wildlife and Ecology

	Regions					
	1	2	3	4	5	Total
More	52%	68%	75%	84%	59%	69%
Same	42	30	23	16	34	28
Less	4	2	2	0	5	2
Eliminate	2	*	*	*	2	1
Number of Cases	(211)	(237)	(243)	(231)	(254)	(1175)
No Opinion	2% (n=5)	3% (n=7)	2% (n=6)	3% (n=6)	1% (n=2)	2% (n=26)

b. Developed Campgrounds

	Regions					
	1	2	3	4	5	Total
More	69%	62%	67%	63%	74%	67%
Same	25	30	23	29	19	26
Less	5	7	8	7	5	6
Eliminate	1	1	2	1	2	1
Number of Cases	(212)	(228)	(243)	(212)	(243)	(1126)
No Opinion	2% (n=4)	6% (n=14)	2% (n=5)	11% (n=26)	5% (n=12)	6% (n=69)

c. Control over Recreational and Other Public Use of the Desert

	Regions					
	1	2	3	4	5	Total
More	36%	57%	58%	64%	48%	55%
Same	37	31	27%	27	37	31
Less	23	12	12	8	13	12
Eliminate	4	0	3	1	2	2
Number of Cases	(205)	(229)	(243)	(225)	(250)	(1150)
No Opinion	5% (n=11)	5% (n=12)	2% (n=6)	5% (n=13)	3% (n=7)	4% (n=47)

d. Primitive Areas

	Regions					
	1	2	3	4	5	Total
More	37%	50%	53%	57%	46%	50%
Same	45	43	36	40	43	41
Less	14	6	10	3	10	8
Eliminate	4	1	1	*	1	1
Number of Cases	(197)	(228)	(236)	(207)	(243)	(1112)
No Opinion	9% (n=19)	7% (n=16)	5% (n=13)	11% (n=26)	5% (n=12)	7% (n=81)

e. Roads for 4-Wheel Drive Use

	Regions					
	1	2	3	4	5	Total
More	46%	30%	37%	32%	47%	38%
Same	36	47	33	29	34	36
Less	14	20	23	18	11	17
Eliminate	4	3	7	21	8	9
Number of Cases	(206)	(217)	(238)	(211)	(241)	(1104)
No Opinion	5% (n=10)	10% (n=25)	4% (n=11)	11% (n=27)	5% (n=14)	8% (n=94)

f. Open Areas for Use of Off-Road Vehicles Like Dunebuggies and Motorcycles

	Regions					
	1	2	3	4	5	Total
More	50%	37%	37%	26%	30%	33%
Same	31	27	22	17	31	25
Less	15	26	30	28	30	28
Eliminate	4	10	11	29	9	14
Number of Cases	(209)	(229)	(245)	(228)	(249)	(1156)
No Opinion	3% (n=7)	5% (n=13)	2% (n=4)	4% (n=10)	3% (n=7)	4% (n=44)

*.5% or less

VI THE ECONOMY AND MANAGEMENT OF THE DESERT

Contributors to the Desert Economy

Respondents were told, "Many activities contribute to the economy of the desert region. Please tell me how important you think each of the following activities is to the overall economy of the desert region." The interviewer then handed the respondent a card listing ten desert activities, such as farming, mining, and recreation activities, and showing the following response options: (1) extremely important, (2) somewhat important, (3) not too important, (4) not at all important, and no opinion.

The mean ratings obtained on the above four-point scale are shown in Table 29. Overall, the most important activity to the desert economy is believed to be recreation, the mean rating for which is about half way between "extremely important" and "somewhat important." Farming is rated second highest, with a mean of 1.62, and resorts, motels, tourist and travel activities are rated third, at 1.64.

The least important activities to the desert economy are believed to be "livestock--grazing" and mining, with means of 2.12 and 2.36, respectively. Conceptually, these means indicate a rating between "somewhat important" and "not too important."

Regional means vary in a generally predictable pattern, such that regions where particular activities predominate tend to rate those activities relatively high (compared to both the other regions and the other activities on the list). (Note that a "high" rating is indicated by a low number!) Thus, recreation is rated highest (most favorably) in Region 1 (the North and East Desert); resorts, motels, tourist and travel score best in Region 4 (the Southwest desert); farming is deemed most important in Region 5 (the South desert); the railroads and the military are seen as most important in Region 3 (the Central desert), site of China Lake Naval Weapons Center and Fort Irwin Military Reservation; and the aircraft and space industry is most important in Region 2 (the West desert), site of Edwards Air Force Base.

Table 29

IMPORTANCE OF ACTIVITIES TO THE DESERT ECONOMY

(Means)

4-point Scale
"Extremely important" = 1; "Not at all important" = 4

	Regions					
	1	2	3	4	5	Total
Recreation activities	1.27	1.72	1.56	1.33	1.47	1.51
Farming	1.52	1.82	2.05	1.66	1.21	1.62
Resorts, motels, tourist and travel activities	1.49	1.97	1.70	1.21	1.64	1.64
Energy development activity	1.65	1.82	1.66	1.77	1.53	1.69
Railroad activity	1.63	2.09	1.32	2.33	1.91	1.93
Military activities	2.40	1.47	1.39	2.46	2.26	1.93
Livestock - feedlot	1.98	2.07	2.21	2.25	1.61	1.98
Aircraft and space industry	2.36	1.30	1.87	2.72	2.37	2.05
Livestock - grazing	2.16	2.16	2.28	2.46	1.79	2.12
Mining activities	2.07	2.22	2.04	2.56	2.57	2.36

Table 30 shows the percentage distribution of ratings on each activity, plus the percentages of residents having no opinion on each item. Activities are listed in the same order as they appear in Table 29 (that is, from most important to least important, as indicated by the mean ratings). Four of the activities--recreation, tourist and resort, farming, and energy development--are rated "extremely important" by 52% or more of desert residents. Each of these activities also is rated "not at all important" by only 5% or fewer. At the opposite end of the distribution, grazing livestock and mining are perceived to be "extremely important" by only 28% and 22% of desert residents, respectively. 9% think grazing livestock is "not at all important;" and 16% give mining a "not at all important" rating. Mining also receives a fairly sizable "no opinion" rating: 14% overall and as many as 24% in a region (Region 4) have no opinion about the importance of mining activities in the desert. This finding, combined with the low ratings given by those who do have an opinion, suggests that mining activities in the desert have a very low profile.

Recreational Contributors to the Desert Economy

Respondents were handed a card and told, "People come to the desert region for many different recreational activities. Please tell me how important you think each of the following types of desert users is to the desert region in providing jobs and income for the people of the region." Possible response categories were the same as those provided for the previous question about contributors to the desert economy.

Table 31 shows the mean ratings for each of the listed activities. There is general agreement that resort users are among the most important kind of recreationists to the desert economy, although Regions 1, 2, and 3 rate travelers going through the desert as equally or more important. Not surprisingly, resort users receive their highest rating in Region 4, where the mean importance level of 1.12 connotes an importance only slightly less than "extreme."

Region 1 is the highest of the regions in the ratings given to travelers going through the desert, water sports enthusiasts, non-mechanized users of the desert, and mechanized users of the desert. These high

Table 30

IMPORTANCE OF ACTIVITIES TO THE DESERT ECONOMY

a. Recreation Activities

	Regions					
	1	2	3	4	5	Total
Extremely impt.	77%	42%	55%	72%	60%	58%
Somewhat impt.	21	44	35	22	32	33
Not too impt.	1	13	9	5	7	8
Not at all impt.	1	1	1	1	1	1
Number of Cases	(213)	(239)	(247)	(238)	(253)	(1188)
No opinion	1% (n=3)	2% (n=4)	* (n=1)	* (n=1)	1% (n=3)	1% (n=13)

b. Tourist & Resort

	Regions					
	1	2	3	4	5	Total
Extremely impt.	65%	30%	53%	83%	49%	53%
Somewhat impt.	23	47	29	14	40	33
Not too impt.	10	20	12	2	8	11
Not at all impt.	2	3	6	1	3	3
Number of Cases	(214)	(242)	(247)	(239)	(249)	(1189)
No opinion	1% (n=2)	1% (n=2)	* (n=1)	1% (n=2)	3% (n=8)	1% (n=17)

c. Mining

	Regions					
	1	2	3	4	5	Total
Extremely impt.	64%	44%	29%	57%	82%	57%
Somewhat impt.	25	34	41	27	16	28
Not too impt.	6	19	26	9	2	12
Not at all impt.	5	3	4	7	0	3
Number of Cases	(210)	(229)	(241)	(225)	(257)	(1161)
No opinion	2% (n=6)	6% (n=15)	3% (n=8)	7% (n=17)	* (n=1)	4% (n=48)

d. Energy Development

	Regions					
	1	2	3	4	5	Total
Extremely impt.	52%	48%	51%	48%	57%	52%
Somewhat impt.	34	31	36	30	33	32
Not too impt.	10	13	9	16	7	11
Not at all impt.	4	8	4	6	3	5
Number of Cases	(204)	(217)	(237)	(226)	(247)	(1126)
No opinion	6% (n=12)	11% (n=27)	5% (n=12)	6% (n=14)	4% (n=9)	6% (n=79)

e. Railroad

	Regions					
	1	2	3	4	5	Total
y important	54%	28%	70%	25%	34%	38%
important	33	42	27	31	46	38
important	10	23	3	27	14	17
ll important	3	7	0	17	6	7
Number of Cases	(212)	(228)	(240)	(208)	(246)	(1126)
No opinion	2% (n=4)	7% (n=16)	3% (n=7)	13% (n=32)	4% (n=11)	7% (n=79)

f. Military

	Regions					
	1	2	3	4	5	Total
Extremely impt.	25%	67%	69%	21%	18%	42%
Somewhat impt.	28	20	24	35	43	31
Not too impt.	27	12	5	20	30	18
Not at all impt.	20	1	2	24	9	9
Number of Cases	(197)	(240)	(245)	(205)	(233)	(1119)
No opinion	8% (n=18)	2% (n=4)	2% (n=4)	15% (n=35)	9% (n=23)	7% (n=84)

*.5% or less

Table 30 (concluded)
IMPORTANCE OF ACTIVITIES TO THE DESERT ECONOMY

g. Aircraft and Space Industry

	Regions					
	1	2	3	4	5	Total
Extremely important	22%	76%	42%	15%	20%	39%
Somewhat important	38	19	36	29	38	31
Not too important	22	3	14	25	23	16
Not at all important	18	2	8	31	19	14
Number of Cases	(202)	(237)	(235)	(207)	(234)	(1112)
No opinion	6% (n=14)	3% (n=7)	6% (n=14)	14% (n=35)	8% (n=21)	8% (n=93)

h. Livestock - Feedlot

	Regions					
	1	2	3	4	5	Total
Extremely important	36%	33%	24%	19%	51%	35%
Somewhat important	38	35	39	46	37	39
Not too important	18	24	29	26	10	20
Not at all important	8	8	8	9	2	6
Number of Cases	(206)	(211)	(235)	(204)	(251)	(1099)
No opinion	5% (n=10)	14% (n=33)	6% (n=14)	1% (n=38)	3% (n=7)	9% (n=110)

i. Livestock - Crazing

	Regions					
	1	2	3	4	5	Total
Extremely important	29%	25%	25%	16%	41%	28%
Somewhat important	37	41	32	35	41	39
Not too important	23	26	34	32	13	24
Not at all important	11	8	9	17	5	9
Number of Cases	(203)	(222)	(233)	(191)	(245)	(1089)
No opinion	6% (n=13)	8% (n=20)	6% (n=16)	20% (n=47)	4% (n=11)	9% (n=109)

j. Mining

	Regions					
	1	2	3	4	5	Total
Extremely important	34%	26%	35%	16%	13%	22%
Somewhat important	37	33	34	35	34	34
Not too important	16	31	23	24	33	28
Not at all important	13	10	8	25	20	16
Number of Cases	(200)	(208)	(228)	(184)	(230)	(1037)
No opinion	7% (n=15)	14% (n=34)	8% (n=21)	24% (n=57)	10% (n=26)	14% (n=166)

Table 31

IMPORTANCE OF RECREATIONAL ACTIVITIES TO DESERT ECONOMY

(Means)

4-point Scale
"Extremely important" = 1; "Not at all important" = 4

	Regions					
	1	2	3	4	5	Total
Desert Resort Users	1.48	1.94	1.81	1.12	1.78	1.67
Travelers going through the Desert	1.45	1.93	1.52	1.84	2.04	1.85
Water Sports Enthusiasts	1.57	2.43	2.42	2.12	2.09	2.22
Non-mechanized Users of the Desert	1.87	2.23	2.14	2.45	2.56	2.34
Mechanized Users of the Desert	2.06	2.39	2.49	2.96	2.23	2.47
Air Sports Enthusiasts	2.65	2.12	2.42	2.74	2.84	2.54

ratings reflect the importance of the Colorado River specifically and recreational activities generally to the economy of Region 1.

Table 32 shows a breakdown of the importance ratings given to each recreational activity. Once again, the activities are listed from most important to least important, as indicated by the mean ratings in Table 31. One-fourth or more of the residents feel that all the recreationists listed except for resort users and travelers going through the desert are "not too important" to the desert economy. In Regions 1, 4, and 5, over 20% expressed the opinion that air sports enthusiasts are "not at all important," and in Region 4, 43% gave mechanized users a "not at all important" rating.

Bureau of Land Management Recognition

Respondents were asked, "Have you ever heard of an agency called the Bureau of Land Management?" Then they were given a card with the following response categories on it and asked to "select the answer that best fits you":

(1) No--never heard of it
(2) Yes--have heard the name, but don't know what they do
(3) Yes--know some of their activities
(4) Yes--know them fairly well

Table 33 shows the distribution of percentages across the several response categories. Slightly less than half (42%) of desert residents have some idea of what BLM does, and of this group, 13% claim to know BLM fairly well. BLM is least well known in Region 5, where 41% say they have never heard of the agency; and best known in Region 1, where 82% claim to at least have heard the name. Familiarity (i.e., a rating of 3 or 4) ranges from a low of 32% in Region 4 to a high of 57% in Region 1.

Table 32

IMPORTANCE OF RECREATIONAL ACTIVITIES TO DESERT ECONOMY

a. Desert Resort Users

	Regions					
	1	2	3	4	5	Total
Extremely impt.	61%	34%	35%	89%	45%	51%
Somewhat impt.	31	43	49	10	36	34
Not too impt.	7	18	14	1	15	12
Not at all impt.	1	5	2	0	4	3
Number of Cases	(216)	(240)	(249)	(240)	(255)	(1197)
No opinion	0 (n=0)	2% (n=4)	0 (n=0)	1% (n=2)	1% (n=3)	1% (n=12)

b. Travelers Going Through the Desert

	Regions					
	1	2	3	4	5	Total
Extremely impt.	61%	33%	59%	42%	24%	38%
Somewhat impt.	34	46	32	37	50	42
Not too impt.	4	15	7	15	24	16
Not at all impt.	1	6	2	6	2	4
Number of Cases	(216)	(243)	(249)	(241)	(255)	(1203)
No opinion	0 (n=0)	* (n=1)	0 (n=0)	* (n=1)	1% (n=2)	* (n=5)

c. Water Sports Enthusiasts

	Regions					
	1	2	3	4	5	Total
Extremely impt.	60%	22%	20%	32%	25%	27%
Somewhat impt.	26	29	32	36	44	35
Not too impt.	11	32	34	20	26	27
Not at all impt.	3	17	14	12	5	11
Number of Cases	(214)	(236)	(245)	(215)	(254)	(1159)
No opinion	* (n=1)	3% (n=8)	2% (n=4)	11% (n=27)	2% (n=4)	4% (n=49)

d. Non-Mechanized Users of the Desert

	Regions					
	1	2	3	4	5	Total
Extremely impt.	35%	25%	24%	21%	13%	21%
Somewhat impt.	43	39	44	34	34	37
Not too impt.	19	25	25	23	37	28
Not at all impt.	3	11	7	22	16	14
Number of Cases	(212)	(237)	(246)	(236)	(249)	(1177)
No opinion	1% (n=2)	3% (n=7)	1% (n=3)	2% (n=6)	3% (n=9)	3% (n=31)

e. Mechanized Users of the Desert

	Regions					
	1	2	3	4	5	Total
Extremely impt.	36%	23%	20%	11%	25%	21%
Somewhat impt.	33	33	32	26	36	32
Not too impt.	20	27	27	20	28	26
Not at all impt.	11	17	21	43	11	21
Number of Cases	(214)	(239)	(247)	(238)	(248)	(1181)
No opinion	1% (n=2)	2% (n=5)	1% (n=2)	2% (n=4)	4% (n=10)	2% (n=27)

f. Air Sports Enthusiasts

	Regions					
	1	2	3	4	5	Total
Extremely impt.	15%	29%	17%	15%	5%	16%
Somewhat impt.	24	39	36	22	28	31
Not too impt.	40	24	34	36	42	34
Not at all impt.	21	8	13	27	25	19
Number of Cases	(206)	(229)	(233)	(221)	(246)	(1134)
No opinion	4% (n=9)	6% (n=15)	6% (n=15)	9% (n=21)	4% (n=10)	6% (n=72)

*.5% or less

Table 33

BUREAU OF LAND MANAGEMENT RECOGNITION

	Regions					
	1	2	3	4	5	Total
No - never heard of it	18%	22%	24%	32%	41%	30%
Yes - have heard the name, but don't know what they do	25	26	31	36	22	28
Yes - know some of their activities	35	41	29	21	24	29
Yes - know them fairly well	22	11	16	11	13	13
Number of Cases	(216)	(244)	(249)	(242)	(259)	(1210)

Perceived Influence of Selected Groups on Desert Management Decisions

After being asked if they had heard of BLM, respondents were told,

> "One of the activities of the Bureau of Land Management is managing the part of the desert shown in white on this map. [Respondents were shown a map of the desert area.] Other parts of the desert are managed by the National Park Service or by the military. In making decisions about how the desert should be managed, the needs of many different groups have to be considered. How much influence do you feel each of the following groups has over decisions about how the Bureau's lands in the desert will be used?"

Respondents were then given a card listing nine potential influence groups and showing the following response categories: (1) a great deal; (2) quite a bit; (3) some; (4) a little; (5) none; no opinion.

The mean ratings given to each group are displayed in Table 34. Overall, the most influential group is believed to be "business people in the desert region" (mean = 1.96), followed closely by "residents of the desert region," with a mean rating of 1.99. Third in perceived influence are "conservation and environmental protection groups," with a mean rating of 2.05. The least influential groups are believed to be "livestock and grazing interests" (2.76), "mining interests" (2.90), and "residents of large metropolitan areas in California" (2.96).

Table 34

PERCEIVED INFLUENCE OF GROUPS ON DESERT MANAGEMENT DECISIONS

(Means)

5-point Scale
"A great deal" = 1; "None" = 5

	Regions					
	1	2	3	4	5	Total
Business people in the Desert Region	2.20	2.08	1.87	1.78	1.91	1.96
Residents of the Desert Region	2.26	2.22	1.83	1.89	1.91	1.99
Conservation and environmental protection groups	2.28	2.00	1.95	2.17	2.03	2.05
Gas, electric, and telephone companies	2.14	2.42	2.20	2.43	2.17	2.30
The military	2.62	1.89	1.94	2.64	2.61	2.30
Organized recreational groups representing special users of the Desert	2.44	2.57	2.57	2.42	2.28	2.44
Livestock and grazing interests	2.73	2.75	2.76	3.08	2.56	2.76
Mining interests	2.75	2.80	2.60	3.27	2.96	2.90
Residents of large metropolitan areas in California	2.88	2.92	2.95	3.62	2.57	2.96

There is considerable diversity among regions in the various groups' perceived influence. Region 1 residents rate the gas, electric and telephone companies the highest of the groups; Region 2 rates the military the highest; Region 3 rates desert residents highest; Region 4 rates desert business people highest; and in Region 5, desert residents and desert business people are tied for highest ratings.

Table 35 shows a breakdown of the perceived influence ratings given to each group, with the groups listed from most to least influential as indicated by the overall mean ratings. Desert residents, conservation groups, and desert business people are all considered to have "a great deal" of influence by 41-46% of desert residents; fewer than 5% thinks any of these groups has no influence. In contrast, only 13-17% of desert residents believe that livestock and grazing interests, mining interests, or California metropolitan residents have a great deal of influence; and 9-20% believe these groups to have no influence.

Perhaps the most interesting aspect of the regional proportions is that Region 4 quite consistently has the highest proportion of residents who rate a given group as having no influence on decisions about desert management. These "no influence" ratings comprise a rather sizable minority with regard to the following groups: the military (20%), livestock and grazing interests (20%), mining interests (22%), and, especially, California metropolitan residents (38%).

Table 35

PERCEIVED INFLUENCE OF GROUPS ON DESERT MANAGEMENT DECISIONS

a. Business people in the Desert Region

	Regions					
	1	2	3	4	5	Total
A great deal	34%	33%	44%	51%	41%	41%
Quite a bit	30	36	32	31	35	34
Some	21	22	17	12	16	17
A little	13	8	6	2	6	6
None	2	1	1	4	2	2
Number of Cases	(209)	(234)	(248)	(238)	(252)	(1179)
No opinion	3% (n=7)	4% (n=10)	* (n=1)	2% (n=4)	2% (n=4)	2% (n=26)

b. Residents of the Desert Region

	Regions					
	1	2	3	4	5	Total
A great deal	42%	36%	52%	56%	47%	46%
Quite a bit	17	25	20	14	26	22
Some	20	23	21	21	18	20
A little	15	12	5	4	6	8
None	6	4	2	5	3	4
Number of Cases	(210)	(236)	(245)	(237)	(252)	(1178)
No opinion	2% (n=5)	3% (n=8)	2% (n=4)	2% (n=5)	2% (n=4)	2% (n=27)

c. Conservation and environmental protection groups

	Regions					
	1	2	3	4	5	Total
A great deal	35%	40%	45%	39%	44%	42%
Quite a bit	23	29	25	25	23	25
Some	24	22	21	19	19	20
A little	12	8	7	13	9	10
None	6	1	2	4	5	3
Number of Cases	(201)	(235)	(244)	(228)	(249)	(1161)
No opinion	6% (n=13)	4% (n=9)	2% (n=5)	5% (n=13)	2% (n=5)	4% (n=42)

d. Gas, electric, and telephone companies

	Regions					
	1	2	3	4	5	Total
A great deal	37%	20%	32%	33%	33%	30%
Quite a bit	27	38	32	27	33	32
Some	24	26	24	16	20	22
A little	8	10	8	10	8	9
None	4	6	4	14	6	7
Number of Cases	(202)	(230)	(243)	(237)	(246)	(1158)
No opinion	6% (n=14)	6 (n=14)	2% (n=6)	2% (n=5)	4% (n=10)	4% (n=47)

e. The military

	Regions					
	1	2	3	4	5	Total
A great deal	27%	48%	47%	29%	18%	34%
Quite a bit	24	25	25	25	30	27
Some	22	20	19	19	31	23
A little	14	4	5	7	12	7
None	13	3	4	20	9	9
Number of Cases	(201)	(237)	(245)	(215)	(241)	(1140)
No opinion	7% (n=15)	2% (n=6)	2% (n=4)	11% (n=27)	5% (n=14)	5% (n=65)

f. Organized recreational groups representing special users of the Desert

	Regions					
	1	2	3	4	5	Total
A great deal	24%	16%	18%	28%	30%	24%
Quite a bit	28	32	31	30	28	30
Some	34	35	32	21	28	29
A little	9	12	14	12	7	11
None	5	5	5	9	7	6
Number of cases	(206)	(224)	(245)	(211)	(247)	(1126)
No opinion	5% (n=10)	8% (n=20)	2% (n=4)	12% (n=30)	4% (n=9)	6% (n=78)

*.5% or less

Table 35 (concluded)

PERCEIVED INFLUENCE OF GROUPS ON DESERT MANAGEMENT DECISIONS

Livestock and grazing interests

	Regions					
	1	2	3	4	5	Total
A great deal	17%	16%	14%	15%	19%	16%
Quite a bit	27	24	26	17	31	25
Some	28	36	36	31	27	32
A little	23	18	17	17	16	18
None	5	6	7	20	7	9
Number of Cases	(205)	(227)	(240)	(209)	(245)	(1122)
No opinion	5% (n=11)	7% (n=16)	3% (n=8)	14% (n=33)	4% (n=10)	7% (n=81)

Mining interests

	Regions					
	1	2	3	4	5	Total
A great deal	21%	14%	18%	7%	13%	13%
Quite a bit	19	21	29	21	21	23
Some	32	38	34	31	30	33
A little	20	21	14	19	21	19
None	8	6	5	22	15	12
Number of Cases	(198)	(207)	(232)	(185)	(234)	(1122)
No opinion	8% (n=18)	14% (n=33)	7% (n=17)	23% (n=55)	8% (n=21)	7% (n=81)

Residents of large metropolitan areas in California

	Regions					
	1	2	3	4	5	Total
A great deal	23%	15%	15%	9%	26%	17%
Quite a bit	18	28	25	16	27	24
Some	22	23	25	16	21	21
A little	21	17	21	21	14	18
None	16	17	14	38	12	20
Number of Cases	(203)	(222)	(241)	(214)	(237)	(1111)
No opinion	6% (n=13)	9% (n=21)	3% (n=8)	12% (n=28)	8% (n=20)	8% (n=96)

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VII DEMOGRAPHIC ANALYSIS OF RESULTS

Two different approaches were taken on the analysis of survey results by demographic characteristics:

1) On items for which ordinal-scaled response categories were provided (e.g., ratings of importance), Pearson product-moment correlation coefficients were computed between the item and age, education, income, and sex.

2) On selected other items for which only a dichotomous response choice was available (e.g., performed vs. not performed), crosstabulations were computed between the item and one or more demographic characteristics.

Pearson correlations were chosen as the preferred method of analysis because correlation coefficients provide a good summary indication of the strength of the relationship between two scaled variables. Correlations also provide information about whether the observed relationship between the two variables analyzed is systematic ("statistically significant") or is a product of chance. The following items were correlated with each of the demographic measures:

Q6: Rating of the desert as a place to live

Q7: Perceived importance of selected activities to the desert economy

Q8: Perceived importance of selected recreational activities to the desert economy

Q9: Knowledge of BLM

Q10: Perceived influence of selected groups on desert management decisions

Q17: Support or opposition to selected types of land use

Q20: Factors affecting the scenic quality of the desert

In addition, the following items were crosstabulated with each of the demographic variables:

Q15-16: Net support for selected types of land use

Q11: Activities performed within the past year

Q22: Desert areas visited

For readers who are not familiar with correlation coefficients, it may be helpful to note that these coefficients range from 0 and 1.0 , with coefficients approaching 0 indicating a weak relationship between the two variables of interest and coefficients approaching 1.0 indicating a strong relationship. The stronger the relationship, the better we are able to predict the value of one of the variables if given the value of the other variable. (A correlation of 1.0 indicates perfect predictability.)

It may also be helpful to know that the square of the coefficient indicates the proportion of the variability in one variable that can be predicted given a value for the other variable. Thus, a correlation of .50 between "A" and "B" indicates that 25% of A's variance can be predicted if we know the value of B. Consideration of this point leads us to the realization that predictability drops markedly as coefficients decrease from 1.0 . ($1.0^2 = 1.0$; $.90^2 = .81$; $.80^2 = .64$; $.70^2 = .49$; $.60^2 = .36$; $.40^2 = .16$; $.30^2 = .09$; $.20^2 = .04$) Nevertheless, since a multitude of factors typically impinges on variables, relatively low coefficients are often statistically significant, especially with relatively large sample sizes. In the current study, with about 1200 cases, a coefficient of $\pm .09$ is statistically significant at the .001 level (that is, would not occur by chance in more than 1 out of 1000 samples.)

Ratings of The Desert As a Place To Live

Age, education and income are all significantly, though not strongly, correlated with ratings of the desert as a place to live. Those who are older, who have more education and higher income all tend to rate the desert more positively than do their counterparts at the opposite ends of the respective scales. However, the relationships are relatively weak, at .09 , .13 , and .15 , respectively. Men and women do not differ significantly in their ratings of the desert.

Perceived Importance of Selected Activities to The Desert Economy

Demographic characteristics tend not to be related to an individual's perception of the importance of the various listed activities to the desert economy. Of the 40 coefficients calculated (10 activities times 4

demographic variables), only 6 are significant at the .001 level, and none of these indicate very strong relationships. The highest of the coefficients indicate negative correlations of the perceived importance of railroad activities with education (-.19) and with income (-.16). That is, people with lower education and income levels show a slight tendency to view the railroads as more important to the desert economy than do people with higher education and income levels. Similar correlations were derived for grazing activities with education ($r = -.13$) and with income ($r = -.10$). In contrast, the perceived importance of resorts, motels, tourist and travel activities is related positively to age ($r = .10$), and to sex (i.e., women view resorts as more important economically than do men, with $r = .12$).

Perceived Importance of Selected Recreational Activities to The Desert Economy

Again, demographic characteristics generally are not important predictors of individual ratings. In this group of 24 correlations (6 activities), only 5 coefficients are significant at the .001 level. However, the largest three of the five involve age: Compared to older people, young people tend to see the following types of desert recreationists as being more important to the desert economy: mechanized users of the desert ($r = -.26$), air sports enthusiasts ($r = -.20$), and non-mechanized users of the desert ($r = -.14$). Conversely, older people tend to rate desert resort users as more important than do younger people ($r = .07$, significant at the .01 level). Income is the best demographic predictor of the perceived importance of water sports enthusiasts, with these people seen as somewhat more important by lower income groups than by higher income groups ($r = -.09$). The final coefficient in this group that is significant at .001 indicates that more highly educated people are somewhat more likely than people with less education to think air sports enthusiasts are important to the desert economy.

Knowledge of BLM

Knowledge of BLM relates more strongly to demographic characteristics, as a group, than does any other variable included in the computations.

Familiarity with BLM is positively related to age ($r = .11$), education ($r = .35$), and income ($r = .24$), and negatively related to sex (i.e., men tend to know more about BLM than do women, $r = -.29$).

Perceived Influence of Selected Groups on Desert Management Decisions

Once again, demographic characteristics are not strongly related to individuals' perceptions: only 9 of 36 coefficients are significant at the .001 level or better, and the highest correlation is .17 (indicating that women view desert business people as having somewhat more influence over desert management decisions than men see them as having). Compared to men, women also give slightly higher influence ratings to desert residents, livestock interests and utilities companies ($r = .13$, .10, and .09, respectively). Most of the other correlations between sex and perceived influence are in the same direction, although they are not statistically significant. Correlations of perceived influence with age show that there is a very slight tendency for younger people to give higher influence ratings than older people. Three of the coefficients reach significance at the .001 level: those relating age and conservationists' influence (-.09), recreation groups (-.10), and livestock interests (-.10). Similarly, correlations with income and education indicate consistently weak negative relationships between the demographic measure and perceived influence ratings. Education and income are significantly related to perceived influence on only one item each: $r = -.11$ between education and utilities' influence, and $r = -.10$ between income and livestock interests' influence.

Support or Opposition to Selected Types of Land Use

The highest correlations here are between age and support for open areas for off-road vehicles like dunebuggies and motorcycles ($r = -.25$) and between age and support for four-wheel drive roads ($r = -.24$). The younger the respondent, the more apt he or she is to support these two types of land use. Conversely, older people are somewhat more apt to support control over recreational and other public use of the desert ($r = .17$). Support for protection of desert wildlife and ecology, primitive areas, and developed campgrounds, does not vary significantly by age. Lower educational and income levels are significantly but weakly

related to support for developed campgrounds (r = -.10 for both), and lower educational levels are also weakly related to support for four-wheel drive roads (r = -.11). Sex of respondent is significantly related only to views on control over recreational and other public desert use: women are somewhat more likely to favor such control than are men (r = .09).

Factors Affecting the Scenic Quality of The Desert

Age, education, and income are significantly related to perceptions of most of the items in this group, while sex shows no significant relationships. Generally, younger people, those with higher education, and those with higher incomes are more apt to believe that the items listed have a negative impact on the scenic quality of the desert than are their respective counterparts at the opposite ends of the age, education, and income scales. The most notable exception to this statement is the correlation of -.20 between age and positive ratings of off-road vehicular activities. That is, older people tend to think ORV activities have a worse impact on scenic quality than do younger people. Among the items listed, "grazing activities" is the only one that is not significantly related to any of the demographic variables.

Net Support for Selected Types of Land Use

Table 36 shows net support scores for 12 types of desert land use crosstabulated by age. Differences among age groups are most striking in the scores on "places for use of off-road vehicles." Here, scores range from 31% for 18-24 year olds to -21% for persons 60 years and older, a range of 52 percentage points. Other large differences among age groups are seen regarding places for organized recreation (which are supported much more widely among 18-24 year olds than among any other age group) and regarding control over recreational and other public use of the desert (which is given only a low level of support by 18-24 year olds and fairly substantial support by persons 60 years and older). Similarly, young people are less apt to support energy development and more apt to oppose commercial development than are older people.

Table 37 shows net support scores crosstabulated by education. College education seems to be related to relatively high levels of support

Table 36

NET SUPPORT SCORES

FOR SELECTED TYPES OF DESERT LAND USE, BY AGE

	18-24	25-29	30-39	40-49	50-59	60+	TOTAL
Protection of desert scenery & natural character	55%	58%	55%	56%	59%	66%	58%
Protection of desert wildlife & ecology	60	62	50	54	52	64	56
Protection of areas of historic & archeological importance	44	58	52	50	60	52	55
Places for organized recreation (amusement parks, sports facilities, etc.)	73	46	44	38	37	42	45
Campgrounds	39	46	41	53	51	39	44
Educational or interpretive programs	38	38	43	39	33	35	38
Control over recreational & other public use	16	22	33	38	35	47	33
Energy development, such as gas & oil wells, geothermal, solar, etc.	27	24	21	32	39	45	31
Roads	6	12	11	16	18	25	14
Places for use of off-road vehicles like dunebuggies & motorcycles	31	15	13	-6	-7	-21	4
Mining	-10	0	-8	-1	4	4	-2
Commercial developments (e.g., hotels, restaurants)	-14	-9	-4	-6	6	1.4	-4
Number of Cases	(187)	(152)	(249)	(219)	(182)	(221)	(1210)

Table 37

NET SUPPORT SCORES

FOR SELECTED TYPES OF DESERT LAND USE, BY EDUCATION

	No H.S. Degree	H.S. Degree	1 or more yrs. College	College Degree(s)	TOTAL
Protection of desert scenery and natural character	54%	57%	63%	60%	58
Protection of desert wildlife & ecology	43	55	63	61	56
Protection of areas of historic & archeological importance	48	51	60	65	55
Places for organized recreation (amusement parks, sports facilities, etc.)	57	53	31	27	45
Campgrounds	48	45	42	39	44
Educational or interpretive programs	38	35	38	43	38
Control over recreational & other public use of desert	38	29	30	39	33
Energy development, such as gas & oil wells, geothermal, solar, etc.	30	27	32	43	31
Roads	22	12	12	10	14
Places for use of off-road vehicles like dunebuggies & motorcycles	-7	10	5	-3	4
Mining	2	-1	-4	-10	-2
Commercial development (e.g., hotels, restaurants)	11	-3	-12	-18	-4
Number of Cases	(304)	(413)	(332)	(144)	(1210)

for protection of the desert and for energy development and to relatively low levels of support for places for organized recreation, campgrounds, and roads. The college educated are also more apt to be opposed to mining and commercial development than are those with less education.

Table 38 shows net support scores crosstabulated by household income. Few clear trends are evident here, although there seems to be a slight tendency for upper income persons to be more critical of mining and commercial development, and somewhat less supportive of campgrounds and places for organized recreation than are lower income persons.

Net support scores crosstabulated by sex are shown in Table 39. Relative to men, women tend to be more supportive of protection of desert scenery, places for organized recreation, educational or interpretive programs, and control over recreational and other public use of the desert. They tend to be less supportive than men of energy development.

Activities Performed Within the Past Year

Table 40 shows the demographic characteristics of persons who reported engaging in each of 26 desert activities within the past year. Note that the percentages shown under each demographic characteristic should be judged according to their relative size vis à vis the proportion of that characteristic in the total sample. Thus, one considers whether a particular characteristic is over- or under-represented in the group of persons performing a given activity.

Men tend to be over-represented among participants in camping at undeveloped sites, target shooting, four-wheel driving, water-based activities on the Colorado River, motorcycle riding, hunting, and backpacking--all (with the possible exception of the Colorado River activities) traditional male activities. They are not especially under-represented among participants in any of the listed activities, except for sand sailing (which has a very small n and may therefore be relatively unreliable).

Persons under 30 tend to be over-represented among participants in most activities, especially those that are typically associated with the young (e.g., four-wheel driving and dunebuggying) and/or are relatively strenuous (e.g., backpacking).

Table 38

NET SUPPORT SCORES

FOR SELECTED TYPES OF DESERT LAND USE, BY INCOME

	Under $6,000	$7,000-$9,999	$10,000-$14,999	$15,000-$19,999	$20,000-$39,000	$40,000 or more	TOTAL
Protection of desert scenery & natural character	57%	60%	59%	58%	55%	69%	58%
Protection of desert wildlife & ecology	55	59	62	53	50	67	56
Protection of areas of historic & archeological importance	47	52	56	55	55	57	55
Places for organized recreation (amusement parks, sports facilities, etc.)	53	67	50	45	42	33	45
Campgrounds	48	44	54	52	32	41	44
Educational or interpretive programs	36	39	41	35	35	45	38
Control over recreational & other public use	32	36	36	26	30	34	33
Energy development, such as gas & oil wells, geothermal, solar, etc.	34	38	28	22	34	56	31
Roads	19	24	18	4	6	22	14
Places for use of off-road vehicles like dunebuggies & motorcycles	-1	-6	17	1	4	-6	4
Mining	1	7	-3	-7	-2	-13	-2
Commercial development (e.g., hotels, restaurants)	11	11	-6	-10	-14	-15	-4
Number of Cases	(188)	(124)	(233)	(185)	(341)	(77)	(1210)

Table 39

NET SUPPORT SCORES

FOR SELECTED TYPES OF DESERT LAND USE, BY SEX

	Male	Female
Protection of desert scenery & natural character	53	63
Protection of desert wildlife & ecology	57	56
Protection of areas of historic & archeological importance	53	55
Places for organized recreation (amusement parks, sports facilities, etc.)	39	51
Campgrounds	46	43
Educational or interpretive programs	33	43
Control over recreational & other public use of the desert	27	39
Energy development, such as gas & oil wells, geothermal, solar, etc.	38	26
Roads	13	16
Places for use of off-road vehicles like dunebuggies & motorcycles	2	4
Mining	1	-5
Commercial development (e.g., hotels, restaurants)	-5	-3
Number of Cases	(598)	(612)

Table 40

CHARACTERISTICS OF PERSONS ENGAGING IN DESERT ACTIVITIES

	% of Persons Engaging in Each Activity Who Are (or Have):*						Total # Engaging In Each Activity
	SEX	AGE			EDUCATION	INCOME	
	Male	<30	30-59	60+	College†	$15,000+	
Sightseeing or driving for pleasure on paved roads	47%	31%	54%	15%	43%	58%	(650)
Picnicking	46	34	54	12	43	56	(613)
Sightseeing & exploring	57	36	55	9	49	61	(460)
Hiking	55	40	52	8	46	62	(383)
Camping in developed campground	52	38	54	8	44	57	(375)
Photography	51	36	55	9	53	62	(362)
Camping at undeveloped sites	61	41	53	6	42	62	(305)
Target shooting	68	44	52	4	41	56	(272)
Educational activities	42	37	54	9	56	60	(264)
Four-wheel driving	61	54	43	3	39	58	(236)
Water-based activities on the Colorado River	60	43	46	11	44	57	(233)
Motorcycle riding (non-competitive)	60	55	43	2	46	58	(231)
Rock climbing	57	45	49	6	42	60	(225)
Hunting	71	44	52	4	38	60	(214)
Horseback riding	51	46	47	7	49	59	(180)
Dunebuggying	59	54	45	1	43	54	(153)
Backpacking	66	59	40	1	60	60	(152)
Rock & mineral collecting	45	18	68	14	47	58	(141)
Water based activities on Salton Sea	53	35	48	17	38	46	(139)
Birdwatching	49	21	59	20	50	57	(136)
Painting	41	41	49	10	53	56	(88)
Prospecting as a hobby	69	34	55	11	47	70	(54)
Motorcycle riding (competitive)	74	63	30	7	21	47	(30)
Scientific research	62	43	52	5	67	71	(21)
Sand sailing	32	50	50	0	26	37	(19)
Hang gliding	64	29	71	0	71	29	(7)
None of these	44	9	50	41	32	32	(190)
% of total sample (1210) in each demographic category	49%	28%	53%	19%	40%	53%	---

*Note that for sex, education and income, 100% - x% = the percentage of persons engaging in the activity who belong to the unlisted category (e.g., 100% - 46% = 54% = the percentage of picnickers who are female)

†One or more years of college

Persons 30-59 are very close to their expected frequency of participation in most activities (i.e., 53%). They tend to be over-represented among rock and mineral collectors, and under-represented among such groups as four-wheel drivers, backpackers, and motorcyclists.

Persons 60 years and older are under-represented in all activities except sightseeing or driving for pleasure, rock and mineral collecting, water-based activities on the Salton Sea, and birdwatching.

Persons with one or more years of college (including those with college degrees) comprise 40% of the total sample and so should be expected by chance to comprise about 50% of the number of persons engaging in each activity. However, they represent considerably more of the group than this on such activities as photography, educational activities, and backpacking. They are particularly under-represented only among the small groups of competitive motorcyclists and sand sailors.

Persons with incomes of $15,000 or more are especially over-represented among participants in sightseeing and exploring, hiking, photography, and camping at undeveloped sites.

Desert Areas Visited

Table 41 shows the demographic characteristics of persons who reported visiting each of four desert areas within the past year. Among visitors to the Salton Sea, men, persons under 30, and those with $15,000 or more income are less prevalent than would be expected by chance. Among visitors to the Colorado River, men are more prevalent than would be expected by chance. Other demographic groups are quite close to their expected levels.

Men are also slightly over-represented among visitors to parks and to BLM lands, as are persons under 30. Persons 60 years and older are under-represented among visitors to both these areas. Finally, persons with incomes of $15,000 or more are over-represented among visitors only to BLM lands.

Table 41

CHARACTERISTICS OF PERSONS VISITING SELECTED DESERT AREAS

	% of Persons Visiting Each Area Who Are (or Have):						Total # Visiting Each Area
	SEX	AGE			EDUCATION	INCOME	
	Male	<30	30-59	60+	College*	$15,000+	
Salton Sea	50%	31%	49%	20%	40%	44%	221
Colorado River	64	34	50	16	46	59	299
National, State, or County Parks	57	36	52	12	46	56	447
BLM-administered lands	57	37	54	9	47	61	408
% of total sample (1210) in each demographic category	49%	28%	53%	19%	40%	53%	---

*One or more years of college

VIII COMPARISON OF CURRENT RESULTS WITH THOSE OF PREVIOUS SURVEYS

Three previous surveys have been conducted for the Bureau of Land Management regarding the public's use of the California desert and attitudes about land use in the desert. Field Research Corporation conducted two statewide surveys, one in 1975 and one in 1977, and Gallup conducted a nationwide survey in 1977. All of these surveys were conducted as part of "omnibus" surveys dealing with a variety of issues. In all three of the surveys (as in the current one) respondents were shown a map of the California desert before they were asked any questions about the area.

The 1975 survey contained two items similar to those in the current study: one on activities the respondent had done or would like to do in the California desert, and another on most and least important types of land use in the desert. The 1977 nationwide survey contained four questions almost identical to questions 15, 16, 17, and 20 in the current study: land uses the respondent would like to see more of or less of (questions 15 - 17), and factors affecting the scenic quality of the desert (question 20). The 1977 statewide survey contained 12 items identical to items 11 through 22 in the current study. The items common to the studies are summarized in Table 42. Following is a comparison of the results found by the various surveys on these common items.

Desert Activities

The current survey and the 1977 statewide survey both asked respondents which of a number of listed activities they had done in the desert in the past year and which of the listed activities (if any) was their primary desert activity. The results of these questions are shown in Table 43. Inspection of this table shows that a consistently higher proportion of desert residents performed the listed activities than did statewide residents who visited the desert the year or so preceding the 1977 survey. (The single exception is backpacking, performed by 13% of desert residents compared to 14% of statewide visitors.) Desert residents were also more likely to have performed one or more of the listed activities (84% vs. 77%).

Table 42

CURRENT INTERVIEW TOPICS ALSO INCLUDED IN PREVIOUS BLM SURVEYS REGARDING THE CALIFORNIA DESERT

	1975 Statewide Survey	1977 Statewide Survey	1977 Nationwide Survey
Desert activities		x	
Activities would like to do	x	x	
Desert areas visited		x	
Restrictions on use of Desert		x	
Sources of concern for safety		x	
Descriptors of the Desert		x	
Objectionable Desert activities		x	
Factors affecting scenic quality		x	x
Attitudes on types of land use in Desert	x	x	x
Further attitudes on types of land use in Desert		x	x

Table 43

DESERT ACTIVITIES: A Comparison of Current Results and 1977 Statewide Results

	Have Done		Primary Activity	
	Desert residents (1978)	Statewide visitors (1977)	Desert residents (1978)	Statewide visitors (1977)
Sightseeing or driving for pleasure on paved roads	54%	46%	18%	13%
Picnicking	51	31	8	2
Sightseeing & exploring	38	32	7	8
Hiking	32	24	4	3
Camping in developed campground	31	29	9	10
Photography	30	24	4	4
Camping at undeveloped sites	25	23	4	6
Educational activities	22	11	4	1
Target shooting	22	12	2	1
Four-wheel driving	20	8	4	2
Water based activities on the Colorado River	19	8	8	2
Motorcycle riding (non-competitive)	19	14	4	4
Rock climbing	19	14	0	< .5
Hunting	18	7	4	1
Horseback riding	15	8	4	2
Backpacking	13	14	1	1
Birdwatching	11	4	1	< .5
Dunebuggying	13	6	1	1
Rock & mineral collecting	12	9	2	2
Water based activities on Salton Sea	12	6	3	2
Painting	7	3	1	< .5
Prospecting as a hobby	4	3	< .5	< .5
Motorcycle riding (competitive)	2	1	1	< .5
Sand sailing	2	1	< .5	0
Scientific research	2	1	< .5	< .5
Hang gliding	1	1	0	< .5
None of these	16	23	5	2
Number of Cases	(1210)	(433)	(985)	(433)

*Data presented here are for statewide residents who visited the California desert within the past year or so.

On the average, the proportion of desert residents performing an activity is six percentage points higher than the proportion of statewide visitors who performed that activity. The two activities with the greatest difference between the two groups are picnicking (reported by 51% of desert residents vs. 31% of statewide visitors) and four-wheel driving (reported by 20% of desert residents vs. 8% of statewide visitors).

Despite these differences, the seven most frequently performed activities are the same for both groups, and sightseeing or driving for pleasure on paved roads, picnicking, and sightseeing and exploring are the top three activities of both groups.

Sightseeing or driving for pleasure on paved roads is the most frequently performed activity of both groups and also the most commonly named primary activity of the two groups (named by 18% of desert residents and by 13% of statewide visitors.) The next most frequently named primary activity of the two groups is camping in developed campgrounds (desert residents, 9%; statewide visitors, 10%). Only one other activity is named as primary by more than 5% of both groups--sightseeing and exploring--cited as primary by 7% of desert residents and by 8% of statewide visitors.

Activities People Would Like to Do

The current survey and the 1977 statewide survey both asked respondents to select the activities they had not done in the past year but would like to try. The 1975 statewide survey asked respondents to select the activities they either do or would like to do in the desert. Table 44 shows the percentages of 1978 desert residents and 1977 statewide visitors who would like to try each listed activity. The table also shows for 1978 desert residents and 1977 statewide residents the sum of the percentages saying they had done an activity plus the percentages saying they would like to try that activity. These sums are compared with the results of the single items "Do or would like to do" from the 1975 survey.

The percentage saying they would like to try a new activity ranges from 1% to 14% in the current survey, and from 1% to 15% in the 1977 survey. The most frequently cited activities of both groups are horseback

Table 44

ACTIVITIES RESPONDENTS WOULD LIKE TO TRY:
A Comparison of Current Results,
1977 Statewide Results, and 1975 Statewide Results

	Haven't done, but would like to		Have done or would like to†		
	Desert Residents (1978)	Statewide Visitors* (1977)	Desert Residents (1978)	Statewide Residents‡ (1977)	Statewide Residents‡ (1975)
Horseback riding	14%	15%	29%	20%	28%
Water based activities on Colorado R.	14	15	33	19	n.c.i.§
Camping-developed campground	13	14	44	30	n.c.i.
Camping-undeveloped sites	10	12	35	22	n.c.i.
Photography	10	15	40	27	37
Backpacking	9	14	22	19	24
Dunebuggying	10	9	23	12	13
Hang gliding	8	7	9	5	7
Hiking	8	11	40	25	36
Picnicking	8	11	59	28	44
Sightseeing & exploring	8	14	46	35	n.c.i
Water based activities - Salton Sea	8	6	20	8	n.c.i.
Motorcycle riding (non-competitive)	7	6	26	14	17**
Prospecting as a hobby	7	6	11	7	n.c.i.
Rock & mineral collecting	7	8	19	14	n.c.i.
Sand sailing	6	5	8	4	8
Educational activities	6	6	28	12	n.c.i.
Four-wheel driving	7	7	27	11	14
Painting	6	3	13	5	12
Hunting	5	6	23	11	17††
Sightseeing, driving on paved roads	6	8	60	36	59‡‡
Rock climbing	4	6	23	12	23
Scientific research	4	2	6	4	n.c.i.
Target shooting	4	4	26	10	20
Birdwatching	3	5	14	7	n.c.i.
Motorcycle riding (competitive)	1	1	3	1	8§§
None of these	23	24	***	***	***
Number of Cases	(1210)	(433)	(1210)	(1031)	(1124)

*Statewide residents who have visited the desert within the past year or so.

†1977 and 1978 values are the sum of the proportions of residents reporting having done an activity and the proportion saying they would like to try that activity (Questions 11 and 13 on 1978 questionnaire). 1975 values are based on the following item: This card contains a list of some different types of recreation activities that take place in the California Desert. Please tell me which of the things on this list, if any, you do or would like to do in the California Desert (19 items on list).

‡Statewide adults (18 years and older) residing in residential dwelling units.

§No comparable item on 1975 survey.

**"Motorcycle riding or play"

††"Jeeping"

‡‡"Sightseeing"

§§"Motorcycle racing"

***not applicable

riding and water-based activities on the Colorado River, both cited by 14% of desert residents and by 15% of statewide visitors. On the average, the proportion of desert residents who would like to try a given activity is 0.9 percentage points lower than the comparable percentage of statewide visitors. The greatest difference is for sightseeing and exploring, which 14% of statewide visitors say they would like to try, compared to 8% of desert residents.

Of the activities that respondents have either done or would like to do, sightseeing and driving for pleasure on paved roads is the most frequently selected activity in all three surveys: 60% of desert residents, 36% of 1977 statewide residents and 59% of 1975 statewide residents have either done this in the desert or would like to. (The activity was worded simply "sightseeing" in the 1975 survey.) The percentages for each activity tend to be rather different from survey to survey. However, of the top five ranked activities in each survey, all but one are among the top five in at least one of the two other surveys. In addition to paved roads sightseeing, the activities in the top five of one or more of the three surveys are: horseback riding, camping in developed campgrounds, photography, hiking, picnicking, and sightseeing and exploring.

Desert Areas Visited

The current survey and the 1977 statewide survey asked respondents how many days, if any, they had spent in recreational visits to the Salton Sea; the Colorado River; national, state or county parks; and desert areas administered by the Bureau of Land Management. (All respondents were shown maps indicating the location of each of these areas.) Table 45 summarizes the results of these questions in the two surveys. For the statewide survey, results are shown both for all statewide residents and for those residents who reported visiting the desert in the year or so preceding the survey. As would be expected, the proportion of desert residents who visited each of the four areas is higher than the proportion of statewide residents visiting these areas. However, the proportions of desert residents and statewide visitors are quite similar for three of the four areas, and the rank order of the proportions visiting each area is the same for both surveys. The one area visited by a

Table 45

RECREATIONAL VISITS TO SELECTED AREAS IN THE CALIFORNIA DESERT:
A Comparison of Current Results and 1977 Statewide Results

Area of desert	Percent spending one or more days in area in past year: Desert residents (1978)	Statewide residents (1977)	Statewide visitors* (1977)	Mean number of days spent in each area in past year: Desert area visitors (1978)	Statewide area visitors (1977)
Salton Sea	19%	6%	13%	10.2	3.6
Colorado River	25%	9%	20%	17.2	6.0
National, State, or County Parks	38%	17%	39%	9.9	6.3
Desert areas administered by BLM	34%	9%	21%	15.5	6.8
Number of Cases (base figure for %s)	(1210)	(1031)	(433)	†	†

*Statewide residents who have visited the desert in the past year or so.
†Not applicable

substantially higher proportion of desert residents than statewide visitors is BLM-administered land, visited by 34% of desert residents and only 21% of statewide visitors. In both surveys, the greatest number of people reported going to national, state, or county parks (38% of desert residents and 39% of statewide visitors); next in order is BLM-administered lands, followed by the Colorado River (visited by 25% of desert residents and 20% of statewide visitors), and then by the Salton Sea (visited by 19% of desert residents and 13% of statewide visitors).

Desert residents who visited the four areas tended to spend considerably more time in each area than did statewide residents. The two groups also differ in the rank order of the average duration of visits across the four areas. Desert residents stayed longest at the Colorado River (a mean of 17.2 days), while statewide residents stayed longest at BLM-administered lands (6.8 days, on the average). The shortest days for desert residents were in parks (an average of 9.9 days); the shortest stays for statewide residents were at the Salton Sea (an average of 3.6 days).

Factors Perceived as Restrictions on Use of the Desert

Respondents in the current survey and the 1977 statewide survey were shown a list of "things that might restrict a person's use of the California desert" and were asked to select the ones, if any, that they "feel are the most important things that keep you from using the California desert more than you do." The factor most often selected by desert residents is "more important personal interests and obligations" (37%--Table 46). This factor was selected by a comparable percentage of statewide residents who have not come to the desert recently (38%), but by a smaller proportion of statewide residents who have made a recent visit to the desert (30%). Cost of time, travel, and equipment was selected by only a slightly smaller proportion of desert residents (33%) than statewide visitors or non-visitors (38% each). In contrast (and predictably), distance to travel was selected by only half as many desert residents (21%) as statewide visitors (42%) or non-visitors (44%). Similarly, desert residents were less apt to select "low personal interest in the California desert" as a restricting factor than were either of the statewide groups (10% vs. 15% and 24%, respectively. Desert residents were more apt to feel that

Table 46

FACTORS CITED AS RESTRICTIONS ON USING THE DESERT:
A Comparison of Current Results and 1977 Statewide Results

	Percent selecting each factor as a restriction on their use of desert		
	Desert Residents (1978)	Statewide Visitors* (1977)	Statewide Non-Visitors† (1977)
More important personal interests and obligations	37%	30%	38%
Cost of time, travel, equipment	33	38	38
Distance to travel	21	42	44
Regulations on the use of public lands	15	11	6
Low personal interest in the California Desert	10	15	24
Conflicts with other recreationists	10	16	6
Other factors	10	6	6
Opportunities to do the same things elsewhere	8	10	8
Don't know, can't say	6	5	8
Number of Cases	(1210)	(433)	(598)

*Statewide residents who have visited the desert in the past year or so.

†Statewide residents who have not visited the desert in the past year or so.

regulations on the use of public lands restricted their use of the desert than were either of the statewide groups (15% vs. 11% and 6%, respectively).

Sources of Concern for Personal Safety in the Desert

Statewide residents in 1977 and desert residents in the current study were asked to select which of a number of listed items (if any) caused them concern for their personal safety while in the desert. As shown in Table 47, desert residents are less apt to be concerned about each of the items listed than are either statewide residents who have visited the desert in the past year or those who have not. The highest proportion of desert residents who express concern about a given item is 48% (for snakes, insects, etc.); the highest proportion of statewide visitors is 69% and, of statewide non-visitors, 63% (both groups concerned about car breakdowns). Desert residents are also more apt to be concerned about none of the items listed (15%) than are statewide visitors (6%) or statewide non-visitors (8%).

Descriptors of the Desert

In the current survey and the 1977 statewide survey, respondents were given a list of adjectives and phrases and asked to select which two or three best describe what is most important to them about the desert. Results for 1978 desert residents, 1977 statewide visitors, and 1977 statewide non-visitors are displayed in Table 48. In all three groups, the word "beauty" was selected most often (by about 60% of each group). "Freedom" is the second most popular descriptor for desert residents (54%), but only fourth on the list for statewide visitors (42%) and non-visitors (35%). Conversely, "nature" was chosen more often by statewide visitors (62%) and by non-visitors (54%) than by desert residents. The word "solitude" was selected by essentially equal proportions of desert residents (43%) and non-visitors (44%), compared to 54% of statewide visitors. Perhaps the most predictable difference is the greater percentage of desert residents who selected "family togetherness" (33%, compared to 21% of statewide visitors and 15% of non-visitors). Also, a sizable minority (14%) of desert residents specified descriptors other than those listed, while only 4% of the statewide visitors and 6% of the non-visitors did so.

Table 47

SOURCES OF CONCERN FOR PERSONAL SAFETY IN THE DESERT:
A Comparison of Current Results and 1977 Statewide Results

	Percent choosing item as source of concern		
	Desert Residents (1978)	Statewide Visitors* (1977)	Statewide Non-Visitors† (1977)
Snakes, insects, etc.	48%	56%	52%
Car breakdown	47	69	63
Flash floods	39	58	47
Unfenced, abandoned mine shafts	39	55	49
Unexploded military shells & bombs	39	60	58
Getting lost	23	41	41
Fear of other recreationists	19	32	20
None of these	15	6	8
No opinion	ǂ	§	6
Number of Cases	(1210)	(433)	(598)

*Statewide residents who have visited the desert in the past year or so.

†Statewide residents who have not visited the desert in the past year or so.

ǂNo "no opinion" category

§.5% or less

Table 48

DESCRIPTORS OF THE DESERT EXPERIENCE:
A Comparison of Current Results and 1977 Statewide Results

	Percent choosing word or phrase as descriptive of most important aspects of the desert to them		
	Desert Residents (1978)	Statewide Visitors* (1977)	Statewide Non-Visitors† (1977)
Beauty	58%	62%	56%
Freedom	54	42	35
Nature	46	62	54
Solitude	43	54	44
Family Togetherness	33	21	15
Adventure	24	34	30
Alter Routine of Life	11	22	10
Companionship	8	6	4
Accomplishment	6	2	2
Recognition	2	7	4
Other (specified)	14	4	6
Don't know	2	1	12
Number of Cases	(1210)	(433)	(598)

*Statewide residents who have visited the desert in the past year or so.

†Statewide residents who have not visited the desert in the past year or so.

Objectionable Desert Activities

Using the same list of activities as was used to determine what recreations people had or would like to engage in, interviewers asked respondents to select which of the activities (if any) they found "particularly objectionable, that is, things which detract from your own recreation or enjoyment of the California desert." Results are shown in Table 49 for desert residents, 1977 statewide visitors and 1977 statewide non-visitors. There is strong agreement among the three groups as to which activities are most objectionable, although the proportion of statewide visitors finding a given activity objectionable tends to be somewhat higher than the comparable proportions of the two other groups. Four of the six most objectionable activities involve motorcycles, dunebuggies, or four-wheel driving. These activities are objected to by 13% to 38% of the people in the three groups. The other two of the six most objectionable activities involve guns: hunting and target shooting, opposed by 14% to 22%. The remaining activities are objected to by 6% or fewer in all three groups. Almost 40% of desert residents and statewide visitors, and 50% of statewide non-visitors, reported that they found none of the listed activities to be particularly objectionable.

Factors Affecting the Scenic Quality of the Desert

Respondents to the 1977 statewide survey and to the current survey were shown a list of seven "things which might have an effect on the scenic quality of the desert." For each item, respondents were asked to tell the interviewer "if it has any effect on your enjoyment of desert scenery," and they were to select an answer category from the following scale: strong negative, slight negative, no effect, positive effect. Respondents to the 1977 nationwide survey were asked essentially the same question except that the items were described as "things which might have a negative effect..." and they were asked to tell the interviewer if each item "has a negative effect..." For those who responded that the effect was indeed negative, the interviewer asked, "Would you say (item) has a strong or only somewhat negative effect on the scenic quality of the desert?"

Table 49

OBJECTIONABLE ACTIVITIES: A Comparison of Current Results and 1977 Statewide Results

	Percent who find activity "particularly objectionable"		
	Desert residents (1978)	Statewide visitors* (1977)	Statewide non-visitors† (1977)
None of listed activities	38%	37%	50%
Motorcycle riding (non-competitive)	34	38	30
Motorcycle riding (competitive)	29	36	29
Dunebuggying	23	31	22
Hunting	14	21	15
Target shooting	14	20	22
Four-wheel driving	13	20	14
Camping at undeveloped sites	2	6	3
Hang gliding	2	4	5
Scientific research	1	< 1	< 1
Sand sailing	1	5	6
Rock climbing	1	3	2
Birdwatching	1	< 1	< 1
Hiking	1	< 1	< 1
Sightseeing & driving for pleasure on paved roads	< 1	3	3
Rock & mineral collecting	< 1	2	1
Water based activities on Colo. R.	< 1	2	1
Camping in developed campground	< 1	1	3
Water based activities on Salton Sea	< 1	2	1
(Other listed activities named by fewer than 1% of respondents in each of the three categories shown here)			
Number of Cases	(1210)	(433)	(598)

*Statewide residents who have visited the desert within the past year or so.

†Statewide residents who have not visited the desert in the past year or so.

Because of its emphasis on "negative," the nationwide survey should be expected to receive more negative ratings than the statewide or current surveys. Indeed, the average percentage of nationwide opinion-givers who perceive a negative effect of each item is 25 points higher than the average for desert residents, 14 points higher than the average for statewide visitors, and 20 points higher than the average for statewide non-visitors (see Table 50).

For the three California groups, electrical transmission lines are seen by the largest proportions to have a negative effect on scenic quality (ranging from 47% of desert residents to 60% of statewide visitors). For the national group, power lines (considered negative by 74%) are second to mining activities (considered negative by 77%). Generally, desert residents are less apt to perceive an item as having a negative effect than are individuals in the other groups. The rank order of items for the different groups also varies, although the same two items receive the lowest negative ratings of all four groups: mountain-top communication sites and grazing activities.

Attitudes about Selected Types of Desert Land Use

Respondents in the current survey and in the two 1977 surveys were given a list of 12 types of desert land use or activities and asked to select the items they would like to see more of in the desert and those they would like to see less of. The 1975 statewide survey asked a similar set of questions, but were asked to select "most important" and "least important" activities. Table 51 shows the net support scores obtained in each survey (i.e., the percentage who would like to see more of an item or felt it was most important minus the percentage who would like to see less of the item or felt it was least important).

For all the groups on which data are available, strongest support is given to protection of the desert scenery, ecology, and historically or archeologically important areas. Net support for each of these protective activities is over 50% in the three most recent surveys and 35% or over in the 1975 survey. Relative to 1977 statewide and nationwide people however, desert residents are somewhat less supportive of these protective

Table 50

PERCEIVED NEGATIVE EFFECT OF SELECTED ITEMS ON ENJOYMENT OF DESERT SCENERY: A Comparison of Current Results, 1977 Statewide Results and 1977 Nationwide Results

	Percent Perceiving Negative Effect			
	Desert Residents (1978)	Statewide Visitors* (1977)	Statewide Non-Visitors† (1977)	Nationwide Opinion-givers‡ (1977)
Electrical transmission lines	47%	60%	52%	74%
Off-road vehicular activities	48	50	45	59
Visible marks of ditches that have been dug for underground pipelines§	43	52	50	69
Power generating plants	40	59	47	72
Mining activities	27	49	40	77
Mountain-top communication sites	18	28	23	41
Grazing activities	14	18	15	23
Number of Cases	(1198)	(433)	(598)	(629)

*Statewide residents who have visited the desert within the past year or so.
†Statewide residents who have not visited the desert within the past year or so.
‡Nationwide residents who agreed to give their opinions about how the desert should be used.
§Nationwide wording was: "Surface scars due to underground pipelines"

Table 51

NET SUPPORT FOR TYPES OF LAND USE: A Comparison of Current Results, 1977 Statewide Results, and 1977 Nationwide Results

	Net Support Score*				
	Desert Residents (1978)	Statewide Visitors† (1977)	Statewide Non-Visitors‡ (1977)	Statewide Residents (1975)	Nationwide Opinion-givers§ (1977)
Protection of desert scenery and natural character	+58%	+69%	+56%	n.c.i.**	+71%
Protection of desert wildlife and ecology	+56	+72	+60	+44%	+80
Protection of areas of historic & archeological importance	+53	+67	+52	+35	+65
Campgrounds	+44	+50	+30	+19	+31
Places for organized recreation (amusement parks, sports facilities, etc.)	+45	+13	+2	-13	-3
Educational or interpretive programs	+38	+44	+31	+3††	+42
Control over recreational & other public use	+33	+43	+44	+17	+53
Energy development such as gas & oil wells, geothermal, solar, etc.	+31	+8	+12	n.c.i.	+21
Roads	+14	+12	+4	-5	-7
Places for use of off-road vehicles like dunebuggies & motorcycles	+4	-2	-15	-34	-23
Mining	-2	-18	-9	-8	-27
Commercial development such as hotels and motels	-4	-29	-16	-46‡‡	-41
Number of Cases	(1210)	(433)	(598)	(1124)	(629)

*For 1977 and 1978 data, net support score = percent who would like to see more of the activity minus the percent who would like to see less of the activity. For 1975 data, net support score = percent rating activity as one of the "three most important" minus percent rating activity as one of the "three least important."

†Statewide residents who have visited the desert within the past year or so.

‡Statewide residents who have not visited the desert within the past year or so.

§Nationwide residents who agreed to express their opinion about how the California desert should be used.

**No comparable item on 1975 survey.

††"More educational programs"

‡‡"Motels and eating places"

activities and also of control over recreational and other public use of the desert. Conversely, desert residents are more apt to support campgrounds, places for organized recreation, energy development, and roads than are the other groups. Moreover, unlike any of the other groups, desert residents give a very slight net support (+4%) to places for use of ORVs. Desert residents are similar to the other groups in their net opposition to mining (-2%) and to commercial development such as hotels and motels (-4%), although even here the opposition is not as widespread as in the other groups (e.g., net scores of desert visitors for the two activities are -18% and -29%, respectively, and nationwide net scores are -27% and -41%). In general, desert residents appear to be interested in protecting the desert but at the same time being able to make active use of it.

Further Attitudes about Desert Land Use

After having responded to the land use items discussed above, respondents in the three 1977 and 1978 surveys were given a card with several more land use items listed on it and were asked to determine whether they would like to see more, less, about the same, or the elimination of each land use listed. Results of this question on the three surveys are presented in Table 52. The four groups' scores on protection of desert wildlife and ecology, primitive areas, and control over recreational and other public use of the desert are all fairly similar. All groups give considerable support to these types of land use (+37% to +82%). The three California groups also give considerable support to developed campgrounds. However, the desert group alone shows any net support (+11%) for four-wheel drive roads; the other three groups show slight net opposition (-2% to -17%). All groups show net opposition to open areas for use of off-road vehicles like dunebuggies and motorcycles, but the desert group is less opposed than are the other groups. The nationwide group, in particular, shows strong net opposition to places for ORVs. One reason for this relatively extreme rating is probably the use of the word "unrestricted" modifying "open areas..." in the nationwide survey.

The four columns on the right side of Table 52 are included to give an indication of the amount of strong opposition to each type of land use

Table 52

FURTHER ATTITUDES ON TYPES OF LAND USE: A Comparison of Current Results, 1977 Statewide Results, and 1977 Nationwide Results

Types of Land Use	Net Support Score*				Percent Wanting to Eliminate Activity			
	Desert Residents	Statewide† Visitors	Statewide‡ Non-Visitors	Nationwide§ Opinion-Givers	Desert Residents	Statewide† Visitors	Statewide‡ Non-Visitors	Nationwide§ Opinion-Givers
Protection of desert wildlife and ecology	+64%	+78%	+71%	+82%	1%	††	1%	0%
Developed campgrounds	+55	+47	+40	+21	1	1	3	3
Control over recreational and other public use of the desert	+40	+40	+43	+54	2	3	1	1
Primitive areas	+38	+50	+37	+53	1	††	1	1
Roads for 4-wheel drive use	+11	-2	-8	-17	8	9	11	9
Open areas for use of off-road vehicles like dunebuggies & motorcycles**	-8	-15	-20	-41	14	12	14	20
Number of Cases	(1210)			(629)	(1210)			(629)

*Net support score is proportion who said would like to see more of a type of land use minus the proportion who said would like to see less of or eliminate that type of land use. (Denominator for these proportions includes respondents who had no opinion ("can't say").)

†Statewide residents who have visited the desert in the past year or so.

‡Statewide residents who have not visited the desert in the past year or so.

§Nationwide residents who agreed to give their opinions about how the desert should be used.

**Nationwide wording was: "Unrestricted open areas..."

††.5% or less

listed. The first four items listed all have very small percentages of people who want that type of land use eliminated (all are less than 4%, and most are 1% or less). The last two items, however, show somewhat more opposition from each of the four groups: between 8% and 11% of the people would like to see four-wheel drive roads eliminated; and between 12% and 20% would like to see open areas for ORVs eliminated. (Note that the 20% figure relates to unrestricted open areas for ORVs.)

Population Demographics

Of the three previous surveys, only the 1977 nationwide survey reported on the demographic make-up of the survey respondents. These results are compared in Table 53 with the demographic make-up of the current survey population. Inspection of this table shows that the two populations are quite similar. The current survey has a slightly higher proportion of people 60 years and older (19% vs. 16%), reflecting the relatively high number of older persons in Region 4 (the Southwest desert). Relative to the nationwide survey, the current study included a higher proportion of people without a college education (60% vs. 45%) but also a higher proportion with incomes of $20,000 or more (37% vs. 29%). The lower education figure reflects lower proportions of college educated individuals in all five desert regions (compared to the nationwide proportion). The relatively high income figure for the desert is a reflection of the high incomes in Region 4 (where 11% reported incomes of $50,000 or more.)

Table 53

POPULATION DEMOGRAPHICS: A Comparison of Current Results with 1977 Nationwide Results

		Desert Residents (1978)	Nationwide Opinion-Givers (1977)
A.	Age		
	18-24 years	16%	17%
	25-29 years	12	14
	30-39 years	20	20
	40-49 years	18	17
	50-59 years	15	15
	60 and older	19	16
B.	Education		
	No H.S. degree	25%	17%
	H.S. degree	35	28
	One or more years of college	28	27
	College degree(s)	12	22
C.	Annual Household Income		
	Under $7,000	16%	17%
	$ 7,000 - $ 9,999	11	9
	$10,000 - $14,999	20	23
	$15,000 - $19,999	16	20
	$20,000 - $39,999	30	24
	$40,000 and over	7	5
D.	Sex		
	Male	49%	55%
	Female	51	45

APPENDICES

APPENDIX A
The Questionnaire

OMB 42S77011
Expiration 11/78

Card 1
298-042
Form 1

CALIFORNIA DESERT SURVEY

Time started:_____

INTERVIEWER: RECORD CLUSTER NO. HERE:_____

Hello, my name is _____ from Field Research Corporation. We are doing a survey for the United States Department of the Interior about the California Desert. I'd like to ask you some questions about living in the Desert, about the Desert economy, and recreation in the Desert, and, generally, your attitudes about the Desert. Your answers to these questions will help the Department decide how its lands in the Desert should be used. The questions should take no more than about 25 minutes. (ONLY IF NECESSARY SAY: This is a bonafide opinion survey --we are definitely not selling anything.)

1a. (SHOW MAP) Were you born in the California Desert area shown on this map, or did you move here? (POINT OUT THAT CALIFORNIA DESERT IS AREA OUTLINED BY BROWN LINE.)

BORN HERE . . . . . 1 (SKIP TO Q. 2a)
MOVED HERE . . . . . 2 (ASK Q. 1b)

[24]

(IF MOVED HERE):

1b. Where did you move <u>from</u> to come to the Desert?

NORTHERN CALIF. 1
SOUTHERN CALIF. 2
OTHER _____ . . 3
(specify)

[25]

1c. Did you originally move to this area because of a job transfer or military service assignment?

YES . . . . . 1 (SKIP TO Q. 2a)
NO . . . . . 2 (ASK Q. 1d)

[26]

(IF NO)

1d. Did you originally move to the Desert for medical reasons or for the health of yourself or a family member?

YES . . . . . 1 (SKIP TO Q. 2a)
NO . . . . . 2 (ASK Q. 1e)

[27]

(IF NO)

1e. What <u>was</u> your main reason for moving to the Desert area?

_____ [28-29]

_____

2a. Are you a permanent resident in the Desert, or do you live here only part of the year?

PERMANENT RESIDENT . . . 1 (SKIP TO Q. 3)
PART YEAR RESIDENT . . . 2 (ASK Q. 2b & c) [30]

(IF PART YEAR RESIDENT)

2b. How much of the year do you spend in the Desert?

ONE MONTH OR LESS 1
TWO MONTHS 2
THREE MONTHS. 3
FOUR MONTHS OR MORE . . . . . 4 [31]

2c. Where is your other residence located?

SOUTHERN CALIFORNIA 1
NORTHERN CALIFORNIA 2
OTHER _____ . 3 [32]
(specify)

3. In all, how long have you lived in the Desert region included within the brown boundaries on that map? (SHOW MAP)

UNDER ONE YEAR. 1
1 - 4 YEARS 2
5 - 9 YEARS 3
10 - 14 YEARS 4
15 OR MORE YEARS. . . . 5 [33]

4. Do you have any present plans to move away from the Desert region within the next year or so?

YES 1
MAYBE, NOT SURE 2
NO . . . . . 3 [34]

5a. What is the one thing you like best about living in the Desert region?

_____

_____ [35-36]

5b. What is the one thing you dislike the most about living in the Desert region?

_____

_____ [37-38]

6. How would you personally rate the Desert as a place to live? (SHOW CARD A)

EXCELLENT 1
GOOD (ABOVE AVERAGE). 2
FAIR (AVERAGE) 3
POOR (BELOW AVERAGE). 4
TERRIBLE 5
NO OPINION. . . . . 9 [39]

7. Many activities contribute to the economy of the Desert region. Please tell me how important you think each of the following activities is to the overall economy of the Desert region. (SHOW CARD B)

		EXTREMELY IMPORTANT	SOMEWHAT IMPORTANT	NOT TOO IMPORTANT	NOT AT ALL IMPORTANT	NO OPINION	
a.	Farming	1	2	3	4	9	[40]
b.	Livestock - feedlot	1	2	3	4	9	[41]
c.	Livestock - grazing	1	2	3	4	9	[42]
d.	Military activities	1	2	3	4	9	[43]
e.	Mining activities	1	2	3	4	9	[44]
f.	Aircraft and space industry	1	2	3	4	9	[45]
g.	Railroad activity	1	2	3	4	9	[46]
h.	Energy development activity	1	2	3	4	9	[47]
i.	Recreation activities	1	2	3	4	9	[48]
j.	Resorts, motels, tourist and travel activities	1	2	3	4	9	[49]

8. People come to the Desert region for many different recreational activities. Please tell me how important you think each of the following types of Desert users is to the Desert region in providing jobs and income for the people of the region. (SHOW CARD B)

	TYPE OF DESERT USER	IMPORTANCE IN PROVIDING DESERT JOBS & INCOME: EXTREMELY IMPORTANT	SOMEWHAT IMPORTANT	NOT TOO IMPORTANT	NOT AT ALL IMPORTANT	NO OPINION	
a.	Water Sports Enthusiasts (boaters, fishermen, etc.)	1	2	3	4	9	[50]
b.	Mechanized users of the Desert (dune buggy users, cyclists, jeepers, etc.)	1	2	3	4	9	[51]
c.	Travelers going <u>through</u> the Desert (skiers, Las Vegas travelers, vacationers, etc.)	1	2	3	4	9	[52]
d.	Air Sports Enthusiasts (glider pilots, balloonists, hang gliders, etc.)	1	2	3	4	9	[53]
e.	Non-mechanized users of the Desert (hikers, hunters, rockhounds)	1	2	3	4	9	[54]
f.	Desert Resort Users (golfers winter vacationers, sun lovers, etc.)	1	2	3	4	9	[55]

9. Have you ever heard of an agency called the Bureau of Land Management? Use this card (CARD C) and select the answer that best fits you.

NO -- NEVER HEARD OF IT. 1
YES -- HAVE HEARD THE NAME, BUT DON'T KNOW WHAT THEY DO. 2
YES -- KNOW SOME OF THEIR ACTIVITIES 3
YES -- KNOW THEM FAIRLY WELL . . . . . 4 [56]

One of the activities of the Bureau of Land Management is managing the part of the Desert shown in white on this map. (SHOW MAP) Other parts of the Desert are managed by the National Park Service or by the military.

10. In making decisions about how the Desert should be managed, the needs of many different groups have to be considered. How much influence do you feel each of the following groups has over decisions about how the Bureau's lands in the Desert will be used? (SHOW CARD D)

	A GREAT DEAL	QUITE A BIT	SOME	A LITTLE	NONE	NO OPINION	
a. Residents of large metropolitan areas in California	1	2	3	4	5	9	[57]
b. Residents of the Desert Region	1	2	3	4	5	9	[58]
c. Business people in the Desert Region	1	2	3	4	5	9	[59]
d. Conservation and environmental protection groups	1	2	3	4	5	9	[60]
e. Organized recreational groups representing special users of the Desert	1	2	3	4	5	9	[61]
f. Mining interests	1	2	3	4	5	9	[62]
g. Livestock and grazing interests	1	2	3	4	5	9	[63]
h. Gas, electric, and telephone companies	1	2	3	4	5	9	[64]
i. The military.	1	2	3	4	5	9	[65]

Blank [66-80]
I.D. [1-5]
2 [6]

The next part of the questionnaire is about your recreational use of and your attitudes about the Desert region.

11. (SHOW CARD E) This card lists a number of activities that people can do in the California desert. Which of these, if any, have you done in the California desert during the past year? (RECORD BELOW)

(IF HAVE DONE ANY OF THESE ACTIVITIES -- FROM QUES.11, ASK):

12. Which of these, if any, is your primary recreational activity in the desert -- the one that is most important to you in the desert. (RECORD BELOW: CIRCLE ONLY 1 ACTIVITY.)

13. Which of these activities in the California desert that you have not done in the past year do you think you might like to do in the future? (PROBE) Any others?

14. Which of these activities, if any, do you find particularly objectionable, that is, things which detract from your own recreation or enjoyment of the California desert? (RECORD BELOW)

		Ques.11 Have done in past year [7-33]	Ques.12 Primary activity (Circle one) [34-35]	Ques.13 Haven't done, would like to [36-62]	Ques.14 Find objectionable [7-33]
A.	BACKPACKING	1	01	1	1
B.	BIRDWATCHING	2	02	2	2
C.	CAMPING IN DEVELOPED CAMPGROUND	3	03	3	3
D.	CAMPING AT UNDEVELOPED SITES	4	04	4	4
E.	DUNEBUGGYING	5	05	5	5
F.	EDUCATIONAL ACTIVITIES	6	06	6	6
G.	FOUR WHEEL DRIVING	7	07	7	7
H.	HANG GLIDING	8	08	8	8
I.	HIKING	1	09	1	1
J.	HORSEBACK RIDING	2	10	2	2
K.	HUNTING	3	11	3	3
L.	MOTORCYCLE RIDING (NON-COMPETITIVE)	4	12	4	4
M.	MOTORCYCLE RIDING (COMPETITIVE)	5	13	5	5
N.	PAINTING	6	14	6	6
O.	PICNICKING	7	15	7	7
P.	PHOTOGRAPHY	8	16	8	8
Q.	PROSPECTING AS A HOBBY	1	17	1	1
R.	SCIENTIFIC RESEARCH	2	18	2	2
S.	ROCK CLIMBING	3	19	3	3
T.	ROCK & MINERAL COLLECTING	4	20	4	4
U.	SAND SAILING	5	21	5	5
V.	SIGHTSEEING & EXPLORING	6	22	6	6
W.	SIGHTSEEING & DRIVING FOR PLEASURE ON PAVED ROADS	7	23	7	7
X.	TARGET SHOOTING	8	24	8	8
Y.	WATER BASED ACTIVITIES ON THE SALTON SEA	1	25	1	1
Z.	WATER BASED ACTIVITIES ON THE COLORADO RIVER	2	26	2	2
	NONE OF THESE	3	30	3	3

Blank [63-80]
I.D. [1-5]
3 [6]

15. (SHOW CARD F) This card lists a number of things that are now, or might be, in the California desert. Please study the items and tell me which ones you would like to see more of in the desert? (RECORD BELOW)

16. And which ones would you like to see less of in the California desert? (RECORD BELOW)

	Ques. 15 Would like to see more of [34-47]	Ques. 16 Would like to see less of [48-61]
A. PLACES FOR USE OF OFF-ROAD VEHICLES LIKE DUNEBUGGIES AND MOTORCYCLES	1	1
B. CAMPGROUNDS	2	2
C. ROADS	3	3
D. COMMERCIAL DEVELOPMENT SUCH AS HOTELS AND RESTAURANTS	4	4
E. PLACES FOR ORGANIZED RECREATION (AMUSEMENT PARKS, SPORTS FACILITIES, ETC.)	5	5
F. MINING	6	6
G. EDUCATIONAL OR INTERPRETIVE PROGRAMS	7	7
H. PROTECTION OF DESERT WILDLIFE AND ECOLOGY	8	8
I. PROTECTION OF AREAS OF HISTORIC AND ARCHEOLOGICAL IMPORTANCE	1	1
J. CONTROL OVER RECREATIONAL AND OTHER PUBLIC USE	2	2
K. PROTECTION OF DESERT SCENERY AND NATURAL CHARACTER	3	3
L. ENERGY DEVELOPMENT SUCH AS GAS AND OIL WELLS, GEOTHERMAL, SOLAR, ETC	4	4
NONE OF THESE	5	5
DON'T KNOW/CAN'T SAY	9	9

17. (SHOW CARD G) Several more items are listed on this card. Please tell me if you would like to see more, less, about the same or the elimination of (ITEM)

	See more	See less	See same	Eliminate	Can't say	
A. PROTECTION OF DESERT WILDLIFE AND ECOLOGY	1	2	3	4	9	[62]
B. OPEN AREAS FOR USE OF OFF-ROAD VEHICLES LIKE DUNEBUGGIES AND MOTORCYCLES	1	2	3	4	9	[63]
C. CONTROL OVER RECREATIONAL AND OTHER PUBLIC USE OF THE DESERT	1	2	3	4	9	[64]
D. PRIMITIVE AREAS	1	2	3	4	9	[65]
E. DEVELOPED CAMPGROUNDS	1	2	3	4	9	[66]
F. ROADS FOR 4-WHEEL DRIVE USE	1	2	3	4	9	[67]

18. (SHOW CARD H) This card lists a number of words or phrases which some people might use to describe their experience in the California desert. Which two or three best describes what is most important to you about the desert? (PROBE) Are there any other words or phrases that aren't listed that you feel are especially descriptive of how you feel about the desert?

A.	SOLITUDE	1	[68]
B.	ADVENTURE	2	[69]
C.	COMPANIONSHIP	3	[70]
D.	FREEDOM	4	[71]
E.	ACCOMPLISHMENT	5	[72]
F.	BEAUTY	6	[73]
G.	RECOGNITION	7	[74]
H.	NATURE	8	[75]
I.	FAMILY TOGETHERNESS	1	[76]
J.	ALTER ROUTINE OF LIFE	2	[77]
	OTHER: _____ (specify)	3	[78]
	OTHER: _____ (specify)	4	[79]
	DON'T KNOW	9	[80]

I.D. [1-5]
4 [6]

19. (SHOW CARD I) This card lists some things that might restrict a person's use of the California desert. Which of these, if any, do you feel are the most important things that keep you from using the California desert more than you do?

A.	COST OF TIME, TRAVEL, EQUIPMENT, ETC.	1	[7]
B.	DISTANCE TO TRAVEL	2	[8]
C.	OPPORTUNITIES TO DO THE SAME THINGS ELSEWHERE	3	[9]
D.	REGULATIONS ON THE USE OF PUBLIC LANDS	4	[10]
E.	MORE IMPORTANT PERSONAL INTERESTS AND OBLIGATIONS	5	[11]
F.	LOW PERSONAL INTEREST IN THE CALIFORNIA DESERT	6	[12]
G.	CONFLICTS WITH OTHER RECREATIONISTS	7	[13]
H.	OTHER (SPECIFY) _____	8	[14]
	DON'T KNOW	9	[15]

20. (SHOW CARD J) This card lists a number of things which might have an effect on the scenic quality of the desert. For each item listed, please tell me if it has any effect on your enjoyment of desert scenery. Select an answer category that best fits how you feel about each one.

	Strong negative	Slight negative	No effect	Positive effect	
A. GRAZING ACTIVITIES	1	2	3	4	[16]
B. ELECTRICAL TRANSMISSION LINES	1	2	3	4	[17]
C. POWER GENERATING PLANTS	1	2	3	4	[18]
D. MINING ACTIVITIES	1	2	3	4	[19]
E. OFF-ROAD VEHICULAR ACTIVITIES	1	2	3	4	[20]
F. MOUNTAIN-TOP COMMUNICATION SITES	1	2	3	4	[21]
G. VISIBLE MARKS OF DITCHES THAT HAVE BEEN DUG FOR UNDERGROUND PIPELINES	1	2	3	4	[22]

Card 4

21. (SHOW CARD K) Do you have a concern for your personal safety while in the desert regarding any of the things listed on this card?

A.	UNFENCED, ABANDONED MINE SHAFTS 1	[23]
B.	UNEXPLODED MILITARY SHELLS AND BOMBS. . . 2	[24]
C.	FLASH FLOODS. 3	[25]
D.	SNAKES, INSECTS, ETC. 4	[26]
E.	CAR BREAKDOWN 5	[27]
F.	FEAR OF OTHER RECREATIONISTS. 6	[28]
G.	GETTING LOST. 7	[29]
H.	NONE OF THESE 8	[30]

22. SHOW CARD L & DESERT MAP) How many days, if any, during the past year did you spend in each of the areas listed on this card for recreational purposes? Do not include business trips, visits to friends or relatives, or traveling through to get somewhere else. (FOR D , POINT OUT THAT BLM LANDS ARE WHITE AREAS WITHIN BROWN OUTLINE.)

A1.	SALTON SEA	_____	[31-33]
A2.	COLORADO RIVER	_____	[34-36]
B.	NATIONAL, STATE, OR COUNTY PARKS (e.g., DEATH VALLEY, JOSHUA TREE, ANZA-BORREGO, etc.)	_____	[37-39]
D.	DESERT AREAS ADMINISTERED BY BUREAU OF LAND MANAGEMENT	_____	[40-42]

Finally, I'd like to ask you a few questions about yourself. Your answers will be used only to describe how different groups of people responded to the earlier questions.

23. May I ask you your age, please?

18-20 . . . 01
21-24 . . . 02
25-29 . . . 03
30-34 . . . 04
35-39 . . . 05
40-44 . . . 06
45-49 . . . 07
50-54 . . . 08
55-59 . . . 09
60-64 . . . 10
65-69 . . . 11
70 or over. 12

[43-44]

24. What was the last grade you completed in school?

Card 4

8TH GRADE OR LESS 1
9TH, 10TH, OR 11TH GRADE. . . . . 2 [45]
12TH GRADE (COMPLETED HIGH SCHOOL 3
ONE OR TWO YEARS OF COLLEGE, BUSINESS, OR TECHNICAL SCHOOL 4
THREE YEARS OF COLLEGE. 5
COMPLETED COLLEGE. 6
COLLEGE ADVANCED DEGREE 7

25. Now, we don't want to know your exact income, but would you please look at this card and tell me into which of these groups your total income falls? (CARD M) Include the income of all the people who live in this household.

[46-47]

A.	LESS THAN $3,000 01	H.	$25,000 - $29,999. 08
B.	$3,000 - $4,999. 02	I.	$30,000 - $34,999. 09
C.	$5,000 - $6,999. 03	J.	$35,000 - $39,999. 10
D.	$7,000 - $9,999. 04		
E.	$10,000 - $14,999. 05	K.	$40,000 - $44,999. 11
F.	$15,000 - $19,999. 06	L.	$45,000 - $49,999. 12
G.	$20,000 - $24,999. 07	M.	$50,000 OR MORE. 13

26a. Is there a telephone in this residence?

YES . . . . . 1 (ASK Q. 26b)
NO. . . . . 2 (SKIP TO Q. 27) [48]

(IF YES, ASK):

26b. Is your telephone number listed in the current telephone directory?

YES . . . . . 1 (SKIP TO Q. 27)
NO. . . . . 2 } (ASK Q.26c)
DON'T KNOW. . 3 } [49]

(IF "NO" OR DON'T KNOW", ASK):

26c. Is that because you have only had your telephone connected since the current directory was issued, or is this an unlisted number?

SINCE CURRENT DIRECTORY 1
UNLISTED NUMBER . . . . . 2 [50]

27. RECORD SEX

MALE. 1
FEMALE. . . . . 2 [51]

28. RECORD SUB-REGION OF DESERT WHERE INTERVIEW TOOK PLACE

REGION 1 (NORTH AND EAST DESERT) 1
REGION 2 (MOJAVE, LANCASTER, KERN) 2
REGION 3 (BARSTOW, VICTORVILLE) 3
REGION 4 (PALM SPRINGS). 4
REGION 5 (IMPERIAL COUNTY) . . . . . 5 [52]

APPENDIX B

SURVEY METHODOLOGY

General Approach

The survey was carried out by face-to-face personal interviews conducted in the homes of respondents by trained interviewers working under the close supervision of senior staff members of Field Research Corporation. A printed questionnaire form was used containing questions on use of and attitudes toward various aspects of the California desert region. Field Research Corporation was responsible for training and supervising the interviewing staff, conducting the interviews, and field editing the completed questionnaires. SRI International staff oversaw interviewer training and were responsible for the study design, data processing, analysis and reporting.

Sample Size

A total of 1210 interviews were completed and tabulated, 216 in Region 1 (the North and East desert), 242 in Region 2 (the West desert), 248 in Region 3 (the Central desert), 241 in Region 4 (the Southwest desert), and 258 in Region 5 (the South desert).

Dates of Field Work

Interviewing was conducted September 16 - October 13, 1978.

Survey Universe

The survey universe was defined as all adults 18 years of age or older who reside in residential dwelling units in that portion of eastern and

southeastern California defined by the Bureau of Land Management as the survey area. Not included in the survey universe were those persons residing on military bases, persons with no clearly defined places of residence, migrant workers, drifters or inmates of institutions.

Selection of Starting Points

FRC acquired the most up-to-date, detailed map of Southern California from Rand McNally & Company which shows all the cities and towns in the overall survey area. On this map, the exact boundaries of the five regions specified by BLM, were outlined and a detailed listing was made of all the cities and towns in each of these five regions. Next, the latest available population figures for each city and town were posted.

The sampling plan called for 40 clusters of an average of five interviews in each of the five regions. To select these clusters, the population figures were first arrayed in descending order of size. Next, the figures were summed to determine the total population for each region. This number was divided by 40 to derive the interval of selection. Then a random number was drawn from a table of random numbers, falling between 1 and the interval number. From this random number start, the 40 clusters (primary sampling units) were selected in proportion to population within the sub-area. In an area where the population is heavily concentrated in several larger towns, each town had several clusters of interviews. In lightly populated rural areas, the interval determined which towns were included in the sample, and which towns were not.

FRC acquired all of the most recent telephone directories covering the entire survey area. Once the cities or towns, and the number of

clusters within each, were determined, specific key address starting points were drawn from the telephone directory covering that city or town. These key addresses served as the starting points for interviewers at each cluster location.

Selection of Specific Households within Each Cluster

The cluster is a fixed-interval cluster because the assignment was to list and call on a predetermined number of occupied dwelling units (10) at each cluster location, starting from the residence next door to the key address starting point. The interviewer then made up to three attempts (on different days and at different times) on each household s/he listed in an effort to complete an interview. When all possible callbacks had been made, the cluster was completed. FRC does not specify the number of interviews to be completed at each cluster location; this obviously depends on varying levels of at-homeness, cooperation, etc.

Systematic Counting Interval

The interviewers were instructed to locate the key address for a cluster and to go to that address. Facing the key address, they made the first interview attempt at the first household on their immediate left of the key address as they faced the key address, not the key address itself. They listed and called on that household and attempted an interview. Then they proceeded around the block in a clockwise direction, making attempts at each consecutive occupied dwelling unit that they came to, skipping only those that were obviously vacant, until they had listed and called on ten households.

If interviewers ran out of occupied households in the primary block before they had listed and called on ten households, they proceeded to their first alternate block immediately to the north of the primary block, and continued listing and calling on households until they reached ten households. If they were still unable to complete their assignment, they proceeded sequentially, as needed, to alternate blocks to the east, south, and west of the primary block.

In an apartment house or other multiple dwelling at one street address, interviewers listed apartments by number or letter starting with the lowest number (or letter, or first floor) and proceeded with each apartment until they had called on the required number of dwelling units to complete the cluster. Thus, each apartment is considered as a separate dwelling unit.

In irregularly shaped blocks, or rural areas, the following instructions were used:

A block may be circular, triangular, or some other odd shape, or a block may not have any intersections on the side the interviewer was traveling. In this case, s/he proceeded along the street or road, listing and calling on the households on both sides of the street or road as far as s/he needed to go to obtain the quota of listings. If the street ended in vacant lots, industrial areas, uninhabited areas, etc., s/he went back to the original starting address, crossed the street, and worked in the opposite geographic direction until the required number of listings was reached.

Selection of Respondents within Households

Interviewers were not assigned a specific quota of male and female interviews for the survey. FRC's standard procedure for general public opinion surveys is to select respondents as follows: If one adult is at

home, the interviewer asks to interview that person; if more than one adult is at home, the interviewer asks first to interview "the youngest male adult at home;" if no male is at home, the interviewer asks for the "oldest female adult at home." This procedure has been shown to provide an age-sex distribution in the sample which closely matches the Census age-sex distribution of the adult population.

Hence, if both a man and a woman are at home when the interviewer calls, the man is always interviewed. FRC uses this procedure because they have found that men -- as a group -- are less likely to be at home than women are. By interviewing men whenever there is a choice of a man or a woman, the final sample typically consists of roughly equal numbers of men and women. The "youngest man" is asked for first because younger men are less likely to be home than older men. Similarly, "the oldest woman" is given priority among women because older women are less likely to be home than are younger women.

Call-backs

The specifications for this survey called for up to three interview attempts on each household listed in a cluster. This meant an original attempt, plus up to two call-backs. Call-backs were made on different days, at different times. That is, if the first attempt was during the day on Day 1, the second attempt was in the evening on Day 2. The third attempt, if necessary, was during the day on Day 3, but at a different time from Day 1.

The date and time of each interview attempt on each household were recorded by the interviewer on our standard, printed Contact Record Sheet.

These sheets are basic documents for any survey and provide an assessment of interviewer efficiency and the overall completion rates which the survey attains.

Special procedures were implemented in Region 5 to call back those households where the residents speak only Spanish. Spanish-language instruments were prepared and used by specially trained Spanish-speaking interviewers.

Questionnaire

The questionnaire included the 15 questions that the Bureau of Land Management included on FRC's September 1977 FIELDSCOPE omnibus survey plus 10 new questions developed by BLM on quality of desert life and management of public lands.

The questionnaire was pretested by FRC with a small number of persons within the survey area and revised somewhat by SRI to improve question wording and flow. The final version was submitted to and received clearance from OMB/OFSPS. The questionnaire took an average of 29 minutes to administer to respondents.

Interviewing

All interviewing was conducted by Field Research Corporation's interviewing corps. Full-time members from FRC's Los Angeles office briefed the interviewers, closely supervised all interviewing work, and evaluated the performance of each interviewer. A minimum of 20% of each interviewer's work was verified by re-contacting his or her respondents to be sure that the interview was actually conducted and that the interviewing procedures were correctly observed. All interviewers' work was found to be authentic and valid.

Results of Interviewing Attempts

The original sampling plan called for 40 clusters in each of the five regions within the survey area. However, in Region 4 interviewers encountered a higher than estimated incidence of refusals and not-at-homes, so it was necessary to add another eight clusters to complete the required minimum of 200 interviews. Therefore, a total of 208 clusters were worked--40 in each of the other four regions and 48 in Region 4.

Table B-1 shows the results of interview attempts. Inspection of this table shows that an overall response rate of 58% was achieved, with response rates in each region ranging from 48% in Region 4 to 68% in Region 5. The largest proportion of non-response was due to not-at-homes (19%); the second largest category was refusals to cooperate (15%).

Weighting Procedures

For economic and logistical reasons, the sampling design method used by Field Research Corporation for this survey was a stratified cluster method rather than, say, a simple random sample from the population of interest. Therefore, the initial selection probability of households varied depending upon the location of the household. In particular, the selection probability was a function of the region of desert where the interview took place and of the number of listed telephones in the household cluster.

Since we are interested in making inferences regarding the entire California desert population, it was necessary to weight the questionnaire responses to adjust for these location biases. Two weighted procedures were appropriate; one used for intra-region analyses to adjust for telephone density and another used for inter-region analyses to adjust for both telephone density and region population.

TABLE B-1

RESULTS OF INTERVIEW ATTEMPTS

	Total	Region 1	Region 2	Region 3	Region 4	Region 5
Total households called on	2085	402	401	401	481	400
Interviews completed	1211	216	244	250	231	270
Interviews not completed--						
No one home after callbacks	396	101	60	50	136	49
Refused to cooperate, too busy	305	49	75	61	72	48
Communications barrier/ (e.g. don't speak English or Spanish, blind, deaf, etc.)	54	24	5	5	7	13
Inaccessible (locked gate, etc.)	49	3	8	16	16	6
Illness, death in family	38	6	4	12	13	3
No adult available	19	2	4	4	3	6
Started, but terminated	10	-	-	3	2	5
Not specified	3	1	1	-	1	-
Completion rate	58%	54%	61%	62%	48%	68%

Intra-Region Weighting

Statistics presented in this report which are broken out by region are calculated on the basis of intra-region weights. These weights are a slight modification of those suggested by Joie Hubbert of Field Research Corporation in a letter to Michael McNeil of the U.S. Department of Labor. We quote from Ms. Hubbert's letter:

> Since cluster starting points are chosen from current telephone directories, a bias exists giving areas with greater density of listed telephones a higher initial selection probability. Telephone density weighting removes this bias by giving each cluster a weight inversely proportional to the density of listed telephones in that cluster, restoring each cluster selection probability to equality with all others.
>
> This cluster design method called "half open intervals from random starts"* is used whereby each interviewer obtains as many interviews as possible when calling on a cluster of 10 occupied households with a maximum of three attempts. Each completed interview then receives a weight equal to 10/t where t is the number of interviewed households with listed telephones. The effect of the procedure is to equalize the initial selection probability for clusters with differing densities of listed telephones.

Since, in this survey, an 11th (uninterviewed) household was used to determine the cluster starting point, each completed interview should receive a weight proportional to $11/(1+t)$ instead of $10/t$ as indicated in Ms. Hubbert's letter. Here, t stands for the number of interview households with listed telephones. Note that this weighting procedure also partially adjusts for the varying number of completed interviews in the cluster. In general, the fewer the number of completed interviews in a cluster, the more heavily each of those interviews is weighted. This happens because the number of completed interviews limits the possible number of listed telephones.

---

* Stock, J. Stevens, 1962, "How to Improve Samples Based on Telephone Listings," Journal of Advertising Research, New York: ARF (September).

We further normalized the weights so that their sum within a given region was equal to actual number of interviews from that region. This normalization is a convenient way of relating the contribution of each interview to average response values but has no effect on the response percentages themselves. The resulting "intra-region weights" are used in all calculations used to present data for each region individually.

Inter-Region Weighting

Forty clusters containing as many as 10 interviews each were sampled within each of the five desert regions (48 clusters in Region 4). Equal potential sample sizes were specified because inferences of roughly equal statistical accuracy were desired for each region. However, when inferences are to be made across regions, adjustments for population size in each region is necessary. Accordingly, for data presented on the desert area as a whole, data from each region are weighted proportionally to the corresponding regional population. Individual clusters within regions retain the relative magnitudes of their intra-region weights--i.e., telephone density weights--while summing to some total proportional to population.

As with the intra-region weights, the "inter-region" weights have also been normalized, this time so that the sum of weights across all regions is equal to the total sample size (n=1210). These weights are used in all calculations involving the desert area as a whole.

Approximate Determination of Sampling Error

The usual model for calculating the sampling error of a proportion (e.g., the persent responding "YES" to a question) is simply $\sqrt{P(1-P)/N}$ where P is the actual proportion found and N is the sample size. How-

ever, this simple method for calculating sampling error is not appropriate when the proportions are calculated from weighted responses. While weighted responses adjust for bias errors in the sampling method, they have the undesirable side effect of increasing the random sampling error. This happens because when weights are applied to the data points, the "equivalent statistical sample size" (N_s) must be used in the above formula rather than the actual sample size. N_s is approximated by the following formula, and is always smaller than N :

$$N_s = (\sum w_i)^2 / \sum w_i^2$$

where w_i is the weight allocated to interview i and where the summations are taken over all applicable interviews. For intra-region samples, the summations are taken over all interviews in the region. For the inter-region sample, the sums are over all 1210 interviews.

Table B-2 shows the resulting equivalent statistical sample sizes for each region and for the total sample along with the actual sample sizes. Now, when estimating the sampling error for Region 4, for example, we should use $N_s = 178$ in the model $\sqrt{P(1-P)/N_s}$ instead of $N = 242$.

Table B-2

EQUIVALENT STATISTICAL SAMPLE SIZES
AND ESTIMATED MAXIMUM SAMPLING ERROR FOR
DICHOTOMOUS PROPORTIONS

Sample Region	Actual Sample Size (N)	Equivalent Statistical Sample Size (N_s)	Estimated Maximum Sampling Error*
1 North and East desert	216	185.2	±7.2%
2 West desert	244	222.9	±6.6%
3 Central desert	249	198.7	±7.0%
4 Southwest desert	242	177.9	±7.3%
5 South desert	259	187.0	±7.2%
Total Sample	1210	964.5	±3.2%

* error is calculated for dichotomous proportions at the 95% level of confidence. Formula used is:

$$\sigma_p = \sqrt{\frac{.50(1-.50)}{N_s}} \cdot 1.96$$

Note that this procedure does not include calculations to directly account for the effect of clustering on sample error. Such calculations are lengthy and costly and therefore deemed not to be cost effective for the current study. We believe that the above method provides a highly satisfactory estimate of the sampling error for the purposes of this study.

Form 1279-3
(June 1984)

BORROWER'

GV
191.36
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R87 Survey of residents
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